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## ORIGINAL ARTICLES.

### GASTROSTOMY BY WITZEL'S METHOD FOR PRIMARY CANCER OF THE ŒSOPHAGUS.\*

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The patient, S. S., aged forty-eight, occupation puddler in rolling mills, was admitted to the Jefferson Hospital July 31, 1893, at the request of Dr. A. G. Miner, of Niles, Ohio. His father died of asthma, his mother of cancer of the breast. He has always had good health with the exception of an occasional brief attack of rheumatism. For the past thirteen months he has experienced trouble in swallowing; seven months ago he could swallow solid food without much discomfort, but now he can swallow nothing but liquids. He states that the constriction came on gradually and that he noticed from time to time the lessening of the calibre of his Œsophagus. When he takes nourishment he feels first an impediment to the passage at a point corresponding to the sterno-clavicular articulation; then the food passes with comparative ease until it reaches a point which corresponds to half an inch above the lower end of the ensiform appendix. Here he says he can feel a distinct obstruction, and while the food is passing this point he experiences pain in the median line posteriorly, under the inferior angles of both scapulæ (more severe under the left), in the epigastric region, though slight, and in the precordial region. The pain is darting in character.

During the past four months he has had

slight attacks of hematemesis. On July 27, 1893, he lost considerable blood, enough to make him faint, but he attributes this to the introduction of an Œsophageal bougie. He has had gradually increasing emaciation, and has lost forty-nine pounds in the last thirteen months, his weight in June, 1892, being 168 pounds, and in July, 1893, 119 pounds. During the last ten weeks he has had Œsophageal bougies passed twice a week. On the 31st of July I passed a No. 3 rectal bougie through the stricture.

He has never swallowed any corrosive fluids, and has had no traumatism. He does not indulge in alcoholic stimulants stronger than beer, and limits this to two or three glasses a day. He denies all history of syphilis. His appetite is impaired, tongue coated and bowels constipated. The urine is negative.

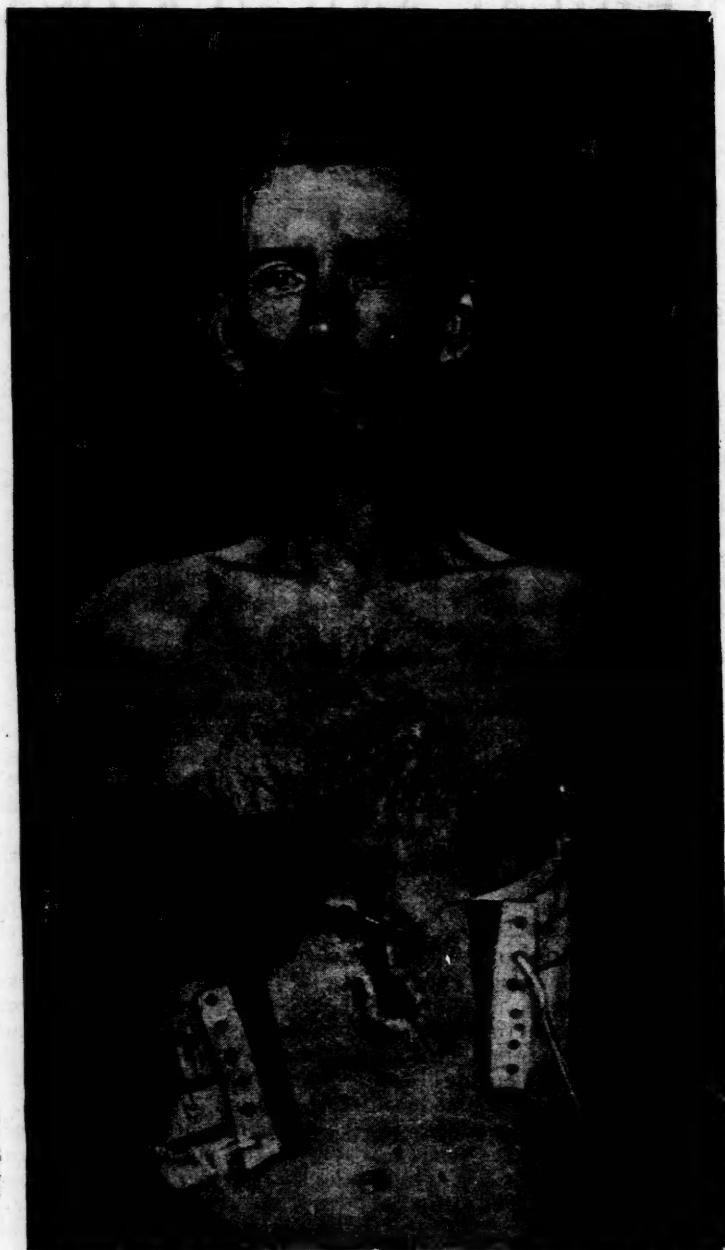
There is a resistance in passing the Œsophageal bougie (circumference 4.2 centimetres) at ten and a half inches from the teeth, and at twelve inches the bougie would not pass.

Operation, August 2, 1893. An incision four inches long was made, beginning at the middle line and running to the left, a finger's breadth below the border of the ribs. The muscular fibres of the rectus were separated by the fingers and not divided. The liver was seen as soon as the peritoneal cavity was opened. Two fingers thrust in, however, very readily seized the stomach. This was brought

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forward and outside the wound, the margins being packed with gauze. A rubber tube, five inches in length (Size 25, Fr.

The opening in the stomach was made toward the cardiac extremity and the tube lay parallel to the external wound, its ex-



catheter scale), was introduced into the stomach and infolded by two rows of Lembert sutures, after Witzel's method.

ternal end emerging near the median line. Three stitches were now inserted into the walls of the stomach but not tied before

it was returned to the abdomen, their needles being left threaded. As soon as the stomach was returned these needles

ently, however, such adhesion had formed that no harm was done by this accident excepting to delay the closure of the wound.

By the middle of September he began to expectorate some bloody mucus, presumably coming from the ulceration of the carcinoma in the œsophagus. He has gained about four pounds in weight, however, since the operation. For some weeks he has been unable to swallow even a mouthful of water. What nutritive gain there is from feeding, I presume has been almost counteracted by the progress of the disease. Immediately after the operation he was fed for two days by rectal enemata. Then I began with small amounts of milk, poured into the stomach through the tube. This feeding has been gradually increased, until at the present time his daily food may be summarized about as follows: Milk, two quarts; beef, mutton and chicken broth, each about twenty ounces; and a dozen eggs. This is varied by substituting gruel, thin custard and other similar food. He is walking about with much comfort. The tube is held in place by a gauze dressing, which in turn is retained by rubber

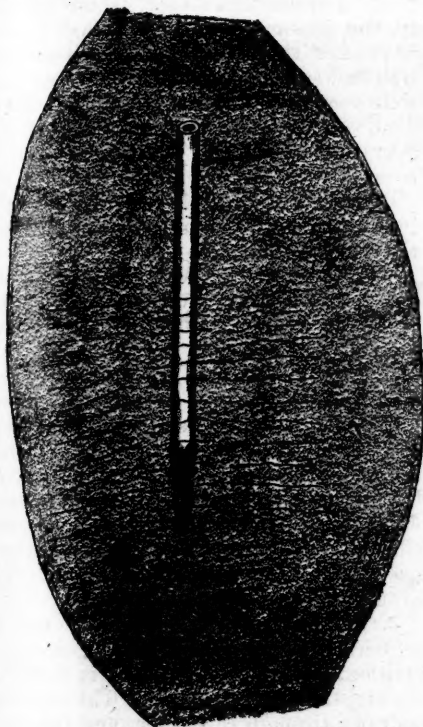


FIG. 2.—Witzel's method for Gastrostomy, showing application of sutures in wall of stomach embedding tube obliquely therein.

were thrust through the abdominal wall and the stomach brought up to the margin of the opening. The tube was retained in place by a catgut stitch passed through the wall of the stomach and through a part of the wall of the tube so as not to open its calibre. About one inch of the tube was thrust into the stomach. The edges of the abdominal opening were now sutured by silkworm-gut and the ordinary dressing applied. A clip was placed on the tube to prevent the escape of the contents of the stomach.

September 28, 1893. The patient made an excellent recovery, without incident, excepting in one respect. On the second day after the operation the dressing became twisted in his movements in bed, and the tube was pulled out of the stomach. In order to replace it I was obliged to cut three stitches in the external wound. When the tube had been replaced these stitches were re-inserted. Appar-

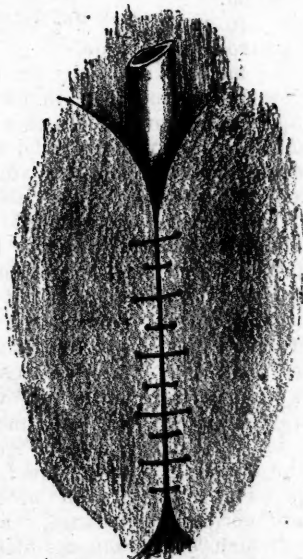


FIG. 3.—Sutures tied completely embedding tube for some distance.

adhesive plaster on each side. This is laced through eyelet holes. (See Plate, Fig. 1). No escape of the gastric contents has taken place alongside of the tube.

November 1, 1893. The patient is still doing well three months after the operation. There is absolutely no leakage whatever.

Greig Smith states that the operation of gastrostomy was first proposed by Egebert, a Norwegian surgeon, in 1837, received its name from Sedillot, in 1846, but had a very unsatisfactory history and development until the time of Sidney Jones, of St. Thomas' Hospital, London, in 1874. Since then it has made rapid progress in favor in the profession, and a variety of different methods of its performance have been devised, until now its technique is presumably so satisfactory that but little improvement can be made upon it. The conditions which demand the operation are, of course, any cause which prevents the introduction of aliment into the stomach by the mouth, for instance, stricture of the œsophagus from any reason, whether by cancer, cicatricial constrictions from caustics, etc., occasionally from the pressure of extra-œsophageal growths, or from malignant disease in the mouth or pharynx. Whitehead<sup>1</sup> has reported a case in which gastrostomy was done on account of obstruction due to a diverticulum.

There are practically five methods by which gastrostomy is done.

1. The method originally proposed by Egebert, and modified in its details by Fenger and Howse.<sup>2</sup> In this an abdominal incision is made parallel with the border of the ribs, and the stomach is attached by sutures to the abdominal wall. Two sutures are placed in the wall of the stomach in order later to identify the exact position for puncture (Bryant), and the stomach is not opened until the third or fourth day. This method has given rise to so much trouble, however, especially from leakage, that various devices have been employed for the purpose of preventing this annoyance, which, in consequence of the irritation from the escaping gastric juice, caused wide-spread eczema or even ulceration. Handford<sup>3</sup> notices, for instance, "a hernia like protrusion of the mucous membrane of the stomach from the fistulous opening, forming a red, mushroom-shaped, insensitive mass, nearly two inches in diam-

eter. This was easily replaced, but led to constant leakage of the stomach contents." Moreover, it is very important to observe that in Whitehead's case, above alluded to, the post-mortem showed that the adhesions of the stomach to the abdominal wall had so loosened by traction that they were very slight indeed when the patient died, six months and a half after the operation. Hence, the importance of secure suturing of the stomach to the abdominal wall, as I believe I have obtained in my own case by suturing the stomach to the abdominal wall.

2. The method of Von Hacker.<sup>1</sup> This operator proposed to use the belly of the rectus muscle as a sphincter. In the first method of operating the fibres of this muscle are divided by a transverse incision. Von Hacker proposed to make a vertical incision and a blunt dissection of the belly of the muscle, hoping that the rectus fibres would thus act as a sphincter. Girard<sup>2</sup> modified this by crossing the fibres of the muscle so as to form a more efficient sphincter. Von Hacker himself has been obliged to use the Scheimpflug canula in order to prevent leakage.

3. The method of Hahn.<sup>1</sup> In this a return is made to the original transverse incision, but a second incision is made in the eighth intercostal space. The stomach is drawn through this space, and fastened there between the cartilages. In addition to the danger of possibly opening the chest, necrosis of the cartilages has taken place, although Hahn affirms that there is no danger either to the diaphragm or the pleura. He believed that the cartilages of the ribs acted like a sphincter or stopcock.

4. The method of Witzel.<sup>4</sup> In this method the abdominal cavity is opened, the stomach drawn out, and a moderate-sized rubber tube is inserted into the stomach toward the cardiac extremity, through as small an opening as will admit it. The gastric end is then buried for about two inches by two rows of ordinary Lembert, or Cushing right-angled sutures. The free end of the tube is then brought out through the abdominal wound, and is either fastened there, or possibly after a time may be removed and inserted as

<sup>1</sup> Lancet, 1891, I, p. 11.

<sup>2</sup> Heath's Dist. of Surg., p. 590.

<sup>3</sup> Lancet, 1891, II, 988.

<sup>1</sup> Wein. Med. Woch., 1886, Vol. xxvi, 1073-1110 and Wein. klin. Woch., 1890, 693.

<sup>2</sup> Corresp. bl. f. Schw. Aertze, 1888, No. 11.

<sup>3</sup> Centralbl. f. Chir., 1890, 193.

<sup>4</sup> Centralbl. f. Chir., 1891, 601.



needed. [I have thus tried to remove the tube temporarily in my patient but had to abandon it from the difficulty of its reintroduction.] The great advantage of this operation is the ureter-like, oblique entrance of the tube into the stomach; and, as is shown by the post-mortem examination in one of Meyer's cases,<sup>1</sup> the result is a nipple-like protuberance into the calibre of the stomach, which will prevent effectually the escape of any fluids.

This seems to me to be by far the best method yet devised, as it is simple, moderately rapid, and, above all, as in the present case as well as a few others in which the operation has been done, it is effectual in preventing any leakage.

I did not immediately begin feeding the patient through the tube, as I deemed it safer, the patient being in very fair physical condition, to nourish him for a couple days by rectal enemata. I did, however, introduce an ounce of milk into the stomach the moment the tube was inserted, in order to make sure that perforation of the mucous membrane, as well as the muscular wall, had been effected. I think it likely that in another case, with the courage born of experience, I should be disposed to nourish the patient by small amounts through the tube immediately after the operation. I wished to try with this patient a method which has been used by others, the effect of his chewing meat which had been previously finely hashed, and then washing it into the stomach through the funnel. This gives the patient the satisfaction of mastication and of taste, and at the same time mixes the saliva with the food before its introduction into the stomach. Although not a man of especially sensitive nature, the idea of doing this seemed to disgust the patient so much that he was not willing to attempt it. The result, however, shows that he has received sufficient nourishment to gain somewhat in weight. Whether his constant hunger, in spite of the nourishment taken, is due to the want of satisfaction of his sense of taste, I do not know.

5. Frank<sup>2</sup> has reported still another method practiced in the clinic of Albert, in Vienna. After making the abdominal incision parallel with the costal cartilages, a narrow fold of the anterior wall of the

stomach is drawn out of this wound. A second incision is next made through the skin, half an inch above the first and over the costal cartilages. After separating the skin from the underlying parts, the fold of the stomach wall is drawn out, first through the abdominal wound, then under the skin, and, finally, through the second opening, and is fixed there, the mucous membrane being stitched to the skin. Whether experience will show this to be more valuable and more easily done than the method of Witzel cannot yet be determined. It is said that no leakage occurs. Of course, as pointed out by the author, it would not be advisable in cicatricial stricture of the oesophagus, because the fistula could not easily be closed, should it be desired to do this at any time.

It is interesting to note that Zweifel,<sup>1</sup> of Leipzig, has used the same process as Witzel in making an artificial urethra. This idea was suggested by Witzel in his paper. In a case of carcinoma of the urethra in a woman, Zweifel extirpated the entire urethra and part of the bladder, closed the latter viscus, and then by a supra-pubic cystotomy made an artificial urethra after Witzel's method.

The mortality of the operation was last collectively investigated by the late Samuel W. Gross.<sup>2</sup> At that time Gross collected 207 gastrostomies, with sixty-one deaths, a mortality of 29.47 per cent., with a prolongation of life, on an average, at the date of the last reports, of eighty-three days.

Comparing gastrostomy with other procedures, there were thirty-two cases of oesophagostomy, with nineteen deaths; a mortality of 59.37, and a mean duration of life of fifty days. Nineteen internal oesophagotomies, with six deaths, or a mortality of 31.57, and an average prolongation of life of 256 days. Five combined oesophagotomies have resulted in two deaths, a mortality of 40 per cent., and a mean duration of life of 168 days. Five oesophagectomies gave three deaths, a mortality of 60 per cent., and a mean duration of life of fifty days. Three retrograde divulsions all resulted in recovery, with a mean duration of life of twenty-two days.

<sup>1</sup> *Annals of Surgery*, 1893, Vol. x, 594.

<sup>2</sup> *Wien. klin. Woch.*, 1893, No. 15.

<sup>1</sup> *Centralbl.*, f. Chir. 1893, 785.

<sup>2</sup> *Trans. of the Amer. Surg. Assoc.*, II, 1885.

In the case of Handford, already alluded to, some very interesting physiological experiments were made. He introduced a small rubber tube attached to a female catheter into the stomach, and connecting it with a Marey's registering tambour and clock work revolving drum, he found the respiratory and cardiac curves well marked, but absolute absence of any peristalsis. This he accounted for by the adhesion of the stomach to the abdominal wall. Yet digestion was efficiently performed, probably due to the replacement

of this motion by the movement produced by the heart and diaphragm. He observes also that "the rapid introduction of large quantities of food into the stomach, the absence of pleasure in eating and the normal perception of flavors are not incompatible with very perfect digestion and active nutrition." Fine division of the food determined its rapid and easy digestion. Lactic acid was found as early as half an hour after eating. Hydrochloric acid was absent until as late as two hours after the meal.

## COMMUNICATIONS.

### TREATMENT OF FRACTURE OF THE LEG.\*

J. T. BERGHOFF, M. D., ST. JOSEPH, MISSOURI.

It has been my fortune for the last twenty years to be called to treat extra severe cases of fracture of the leg. Among them six fractures of the femur which had been treated by other surgeons, but the deformity and shortening were so great that something had to be done to save the patients from being crippled for the balance of their lives. The femur being firmly united, the average shortening is from two to three and one-half inches. The patient was thoroughly anæsthetized, the femur refractured, the fragments properly adjusted, put in my apparatus, and no shortening or deformity could be detected. One particular case I met three years afterwards accidentally, not knowing the patient. He said to me, "Doctor, do you not know me?" I answered, No. "Do you not remember you broke my thigh over; my name is K—. Feel my thigh." Not the slightest thickening at the seat of the fracture could be detected.

In 1892, I was the health officer of St. Joseph. My attention was called to a case, a man 56 years of age, who had been sitting in a rocking chair for 18 days with fracture of his right thigh in the middle third, without ever having been set or dressed in any form. I called on our mayor, Mr. William Shepherd, to go

with me to see that case. When we arrived the mayor said to me, "you never will save that leg." I took him to the hospital. The swelling from the toes to the abdomen was so enormous that the fracture could not be felt. By placing the limb in my apparatus for one week, I had the swelling so far reduced as to be able to feel how and where the point of fracture was. The upper fragment had overridden the lower, the shortening being three and a half inches. This was the twenty-sixth day after the accident. The patient being anæsthetized, the bone was properly adjusted and kept in an immobile condition; the leg had to be redressed four times, as the swelling could not be reduced completely. On the forty-ninth day, that is from the day the limb was set, I removed all dressings, and no shortening or deformity could be detected. I applied a silicate potassa bandage. Next day on my way to the hospital I met the patient six blocks away from the hospital on his way home. I tried to persuade him to go back to the hospital as it could not be expected that the bone was solid, but he refused to go back, saying he felt all right.

I have treated compound comminuted fractures of the leg with this apparatus, one case especially that had been under treatment for ten weeks by two other surgeons, when the case became so desperate that they had to give it up. No

\* Read before the Missouri Valley Medical Association, October, 1893.

union of tibia or fibula was found. The wound was covered with exudations, and erysipelas extended from the toes to the abdomen. The swelling of the thigh near the abdomen measured 32 inches, at the fracture of the leg, middle third, 24 inches, at the ankle 16 inches. The patient had septic fever. Temperature was  $104\frac{1}{2}^{\circ}$ . Patient had diarrhoea, etc. Under the common treatment the patient could not have survived one week. By placing the patient in my apparatus in an immovable condition and applying the proper remedies, both internally and externally, all went on well. In seven weeks the patient was able to be up and about. No shortening or deformity occurred.

I have treated seven cases of compound dislocation of the ankle joint, with fracture of the fibula about five to six inches above the ankle. One of them was also a

and appetite improved. In eight weeks the patient was out, but the astragalus had become partly necrosed and was afterwards removed, but leaving the patient with a good servicable foot. These cases had been treated by others as mentioned above. The six other compound dislocations which I have treated from the first all recovered with good joints, no separation ever having occurred. These are the worst cases I have had to deal with. Simple fractures I will not mention.

In treating fractures of the leg, the leg should never rest on the bedding, but should be suspended even if only two inches above the bedding. I care not how well the surgeon may coaptate the broken bone, and protect the same with splints and bandages or plaster-of-Paris, if the limb rests on the bedding, by each movement of the body of the patient the frac-

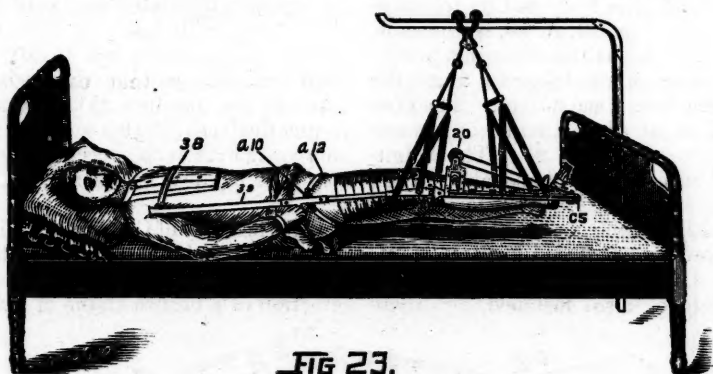


FIG 23.

compound fracture of the tibia, middle third. One of these cases had been treated 30 days by another surgeon, and the dislocation reduced every day for 30 days. The case became so desperate that I was sent for to amputate the leg. The discharge of pus amounted to one-half gallon in 24 hours. The patient had hectic fever, diarrhoea, septicæmia, and lost in 30 days, 60 pounds of weight. Amputation under such conditions was not to be thought of, the whole leg being a suppurating mass. I told the patient to let me treat him for one week so as to endeavor to improve his general condition, and that if the limb could not be saved, I would then amputate it. I placed the patient in my apparatus, adjusted the dislocation and fracture of the fibula, and in a week I had reduced the discharge of pus to about five ounces. Diarrhoea ceased,

ture is bound to move. The process of repair is exactly the same as in soft tissues in bone. Why do we have union by first intention? Because we coaptate the wound exactly and keep it so. The wound heals sometimes in three days, at the farthest a week. But to put the broken limb in an immovable condition and keep it so without great suffering to the patient, the profession has not been able to do to the present time.

This universal apparatus or splint is an outgrowth of patient study for 20 years, more particularly the last ten years.

I will now describe my apparatus. The suspension device consists of a half inch steel elbow bar, as shown in Fig. 23, fastened to the foot-board of the bed, either in or outside which can be raised or lowered at will. On this bar are two rollers for sliding up and down in bed.



Below the bar will be seen a swivel joint, giving the patient liberty to move or change his place in bed, or lay on his side, or by placing table of the height of the bed alongside, the patient can move to have his bed made on the first day without disturbing the fracture in the least. The splint proper is of steel, nickel plated, and so constructed that it can be adjusted to any size of limb, long or short, thick or thin. Fig. 23 (38) is for the treatment of fracture of the neck of the femur or intracapsular, the splint extending to the axilla and fas-

properly applied the limb is immobilized and cannot be injured by the patient if he would. There is no interior or exterior, ensheathing or ferrule required to keep the limb so that fracture dressings cannot be removed. The interior and ensheathing callus will form by nature. (Billroth, p. 208).

In compound comminuted fractures no pains must be spared to remove particles of loose fragments. The wound should be thoroughly cleansed by antiseptics, as bichloride, 1-2000. If then, the fracture

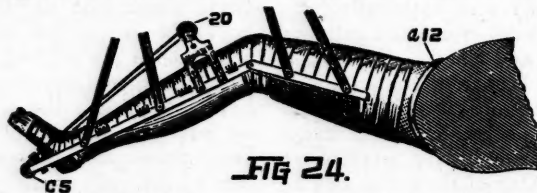


FIG 24.

tened around the body and by telescope to any length. Fig. 23, A. 10, is a movable hip joint. A. 12, counter-extension bands; from hip to knee, also telescope to get the exact length from knee to foot. The knee joint can be set at any angle by a worm wheel, as seen in Fig. 25. The thigh-rest is of wood, also changeable to any size, seen in Fig. 24. The lower limb rests in a hammock fastened by a series of movable hooks from knee to foot. Over this hammock is placed the many-tailed bandage, also fastened by these

is properly coaptated and kept immobile, the bone will heal by first intention. When the dressing has to be changed or renewed, this can be done without disturbing the fracture in the least. After a practical use of this apparatus for over ten years with such success, I now present it to the medical profession.

THE memory of Chevreul, the illustrious chemist, has been commemorated in his native town of Aggess, in France, by the erection of a bronze statue of him.

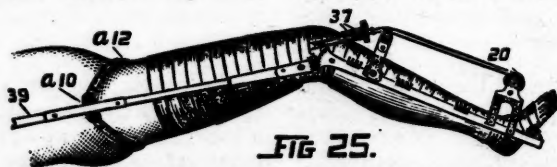


FIG 25.

hooks, by which any suitable posterior or side splints may be used. The extension device made of a spring coil, as seen in Figs. 23, 24, 25, to be placed on any part of the splint, not coming in contact with the limb, wound up with a key to any tension from one pound to thirty; the cords running from a coil of the spring over pulleys from the foot board which is fastened to the foot in the usual manner.

In fracture of the thigh where no extension is necessary from the foot, the adhesive straps are fastened below the lower fragment and the extension device is put at any place, as seen in Fig. 25 (20-37). When this apparatus is

#### Ovariectomy in the Pregnant.\*

Dr. Disner-Livland, has collected from literature 135 cases of ovariectomy performed during pregnancy.

Mortality of the operation is 5.9 per cent. Pregnancy was interrupted by means of the operation in 22 per cent. The puncture of the cyst and artificial induction of labor are not advised, either as a means for relief or for cure. All cases should be operated upon as soon after the the diagnosis is made as possible. This will give best results for the mother. The 2nd, 3rd, and 4th, months are most favorable—*Schmidt's Jahrb.*, No. 9, 1883.

\*Translated for THE MEDICAL AND SURGICAL REPORTER by Marie B. Werner, M. D.



## STUDY OF THE RELATION OF GENERAL DISEASE TO THE DEVELOPMENT OF CATARACT\*

EDWARD JACKSON,† A. M., M. D.

The possible causes of cataract may be considered under three heads, namely: senile degeneration, disease of the eye itself, and general disease impairing the nutrition of the crystalline lens by some influence exerted through the blood or through the nervous system.

The influence of senile change is obviously indicated by the occurrence of cataract chiefly after middle life. That such an influence exists, and is powerful, probably no one questions; but the view that it is the sole cause, or anything more than a predisposing cause in a majority of cases, seems to be negatived by the clinical history of cataract. The changes of age, those which result from the lapse of time and the purely physiological use of an organ under physiological conditions must be, in the main, slowly and steadily progressive; at least, if they were more evident at some times than others, they would never become entirely stationary or in any case retrogressive.

The one fact, however, in the clinical history of so-called senile cataract that seems firmly established by the studies that have heretofore been made of it, is that in the majority of cases the condition is not steadily progressive, but is marked by periods of rapid increase and periods of little or no change, or even in certain conditions, by periods of diminution of opacity.

I well remember a case occurring some years ago in the service of Dr. Harlan at Wills Eye Hospital, where we were inclined to think from the appearance of the opacity that it was likely to be rapidly progressive; the patient received the opinion with perfect composure and apparent indifference, the cause of which became evident when she informed us that she had been told the same thing six years before, and that there had been no perceptible change in her vision during that interval.

In a classical case reported in the *Royal London Ophthalmic Hospital Reports*, 1866, Bowman had seen the patient eigh-

teen years before, and had made a drawing of the opacity which substantially represented its appearance after this long interval.

In a large proportion of the cases of advanced cataract that come to us, the history as obtained from the patient shows one or more periods of a rapid increase of the cloud over the sight, with other periods in which there was little or no change. In my experience it is quite the exception to find that the difficulty has increased steadily and continuously after a period of months or years. From this observation the obvious deduction appears to be that although senility may be a predisposing cause, the efficient determining cause of cataract must be of quite a different character, at least for the great majority of cases.

Of the importance of local pathological conditions within the eye-ball, particularly those of the nutritive coat, the choroid, the importance of which has been strongly urged by Dr. S. D. Risley, I do not now propose to speak. Their importance is certainly very great, but it seems to me clear that general conditions of nutrition are also of importance in this connection. It may be claimed that general conditions act by their influence on the choroid. But even admitting this, such influence often does not become evident by any changes that can be detected in that membrane, but only by the resulting altered nutrition of the lens; and the changes in the choroid, though they may exist, being secondary to the general departure from health, the practical thing to do is to fix our attention and address our remedies to that.

The literature of cataract as carefully reviewed by Dr. de Schweinitz shows a large number of attempts to connect the occurrence of lens opacity with particular general diseases, but with conclusions based upon very insufficient data. For instance, one writer reports a series of cases of cataract in which heart disease was present, and upon the frequency of such a concurrence attempts to establish a connection. So many are the factors to be considered that probably no statistics

\*Read before the Phila. Co. Med. Soc.

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of concurrence possible, up to the present time, or likely to be obtainable in the near future, would furnish a substantial basis for any valuable conclusion in this direction.

Again, very many reported cases, and this applies particularly to the striking ones that might be regarded as of great value, are vitiated by probable inaccuracy of diagnosis.

The difficulty of avoiding errors of this sort may be illustrated by a case reported by Dr. Ruschenberger, of this city, in the *American Journal of the Medical Sciences* for January, 1846. In this case, which was one of acute pneumonia, he noted that "a cataract formed in the right eye within thirty-six hours, and without any appearance of local inflammation. It was ashy white, and vision totally extinct." The case, however, proved fatal. At the autopsy it was discovered that "what was supposed to be a cataract proved an effusion of lymph within the margin of the pupil slightly adherent to the iris. This lymph formed a disk, covering the anterior face of the lens, which was transparent."

Indeed, so imperfect has been the observation of cases, and the sifting of evidence bearing upon this subject, that with regard to the share of particular diseases in the causation of cataract, it is only perhaps with reference to diabetes and ergotism that the testimony can be regarded as sufficient to establish a connection.

Of course, so many inconclusive attempts to establish such a connection between cataract and disease are of value as negative evidence that no such connection exists. They do not, however, militate against the view, that certain vices of general nutrition which may arise in many specific diseases are an important factor in the production of cataract.

Organic heart disease, gout, and arterial sclerosis, as distinct diseases, may have little connection with cataract, yet in their course there may arise the physical conditions which will in particular patients determine the opacification of the lens. To determine whether that is or is not the case will only be possible by the careful and prolonged study of individual cases, the opportunity for which is rarely accorded to the ophthalmic surgeon.

Several years ago, while in general

practice, I had an opportunity of watching a case of mitral disease, during several months of cardiac insufficiency, along with serious gastric disturbances. During this period there was rather rapid impairment of vision through the development of lens opacity, presenting the ordinary clinical characters of cortical senile cataract. Finally, compensatory hypertrophy re-establishing the balance of the circulation, the digestive disorders were relieved and a better state of health was brought about. Vision slightly improved, and for two years the cataract remained quite stationary. After that I am informed her impairment of vision was very slightly progressive for several years. But, prior to her death, as her general condition became impaired, the cataract again grew rapidly worse.

Though cases of this kind may occur frequently, such a patient consulting one or more ophthalmic surgeons in the period of comparative health, they would be quite unable to establish any connection between the lens opacity and the general disease. Again, the medical practitioner who did not employ the ophthalmoscope, or who was not sufficiently familiar with its use to exclude changes in the choroid or vitreous from any share in the progressive impairment of vision, would be quite unable to give convincing evidence upon the subject.

It would seem that here, as in so many other cases, scientific knowledge is only to be advanced by the working together of the specialist and the general practitioner. It might be supposed that this could be accomplished in the general hospitals that have upon their staffs skilled ophthalmologists. But such a study to be of any considerable value must extend over a long period—many months or years; and hospital patients are proverbially inconstant, so that to follow them for the necessary length of time is generally quite impossible. The conditions of private practice, where the family physician remains the trusted medical adviser for years, are those most favorable to such a study, and under its conditions it ought to be more frequently undertaken.

This is especially the case, since the good of the patient urgently demands exact and skilful treatment in all cases of commencing senile cataract. If we are to-day able to do less than we desire to in-

fluence the general conditions, we have some positive knowledge and ability to cope with the local conditions which attend or cause the development of cataract, and the interest of the patient demands the application of our knowledge in every case. Nor is the consultation of the ophthalmologist only justified when a commencing cataract is feared. There is no condition leading to impairment of vision in the course of acute or chronic general disease in persons over fifty years of age that does not demand prompt and accurate diagnosis and appropriate modification of the management of the case.

In early life we do have failure of accommodation, and perhaps some other conditions leading temporarily to impaired vision during or after acute disease, which may go on to recovery without medical interference; but in persons past fifty years this does not occur; and, whether the impairment of vision be from cataract or from some other cause, there is equal need of a full understanding of the case.

Probably the mere calling of certain forms of cataract "senile" is partly responsible for their neglect. Cataract is not due to age in the sense that arsenical poisoning is due to arsenic. It ought to be clearly understood that cataract is senile in the same sense as the fibroid kidney, or arterial atheroma, and is quite as worthy of careful diagnosis and intelligent treatment. The interests of the patient demand his professional supervision; the benefit he may derive from it is as definite and unmistakable as in other diseases. And this supervision should include general as well as ocular conditions, and when it does we begin to accumulate data upon which the medical treatment of cataract will be a rational procedure.

What the general conditions are that specially favor the formation of cataract in the present condition of our ignorance it is scarcely worth while to speculate. Perhaps the most plausible hypothesis is the one urged by the late Dr. Isaac Hays, that the lens opacity is due to a deficiency of water. This was offered as the explanation of diabetic cataract, and that produced experimentally by injections of sugar and various salts beneath the skin of the lower animals. It is also favored by the evident shrinking of the lens when cataract is produced by feeding the animal with naphthalin and the subsequent clear-

ing of such a lens when placed in water.

An hypothesis more nearly in accord with the present views of general pathology, and one probably worth bearing in mind, would be that of the formation and circulation within the body of substances which, reaching the lens by the normal course of the nutritive fluids, act upon it unfavorably.

Briefly, the points which I desire to emphasize by this paper are:

In general, senile change does not produce cataract, but predisposes to it.

The efficient determining causes of cataract are both ocular and general.

The general causes of cataract are not particular diseases as diseases are usually described and classified, so much as physical conditions liable to arise in the course of various diseases.

The nature, prevention, and removal of these general conditions that underlie the development of cataract offer promising fields for scientific study.

The professional supervision necessary for the making of such a study is demanded by the interests of the individual patient.

Speaking more specifically, the study of a cataract case should include the careful testing of vision at regular intervals.

The further examination of the eye to determine in how far impairment of vision is due to cataract, and in how far it is due to other causes.

The careful watching of the patient for other symptoms of impaired general health, especially for faults in the circulation, digestion, and assimilative metabolism.

Particularly at the first appearance of cataract, and at seasons of its rapid increase, would such a study of the case be of importance.

A LAW in Germany requires that all drugs intended for internal use be henceforth put up in round bottles, and those for external use be placed in hexagonal bottles. This enactment is precautionary against poisoning.—*Cincinnati Lancet*.

"Physicians mend or end us,  
*Secundem artem*; but although we sneer  
In health, when ill we call them to attend  
us,

Without the least propensity to jeer."

—BYRON.



THE NECESSITY FOR THE EARLY RECOGNITION AND TREATMENT  
OF SUPPURATIVE DISEASES OF THE TYMPANUM, AND THEIR  
RELATION TO CEREBRAL COMPLICATIONS.\*

S. MACGUEN SMITH, M. D., PHILADELPHIA.

In bringing the subject of this paper before you this evening it is with the hope that one of the many urgent subjects of otology may be so clearly presented, in connection with the discussion which follows, as to deeply impress the busy practitioner with the importance of the early recognition and treatment of aural diseases in general.

We think it is an admitted fact that of all human ailments diseases of the ear have been the most neglected.

From the early days of medicine to the present time aural diseases have largely fallen into the hands of cunning quacks, who, through their hocus-pocus methods, have mystified the always gullible public. In fact, the science of otology has been reduced almost to the primitive teachings of the dark ages, when it was declared by the expounders of ancient wisdom that urine of the male and female, respectively, would cure ear diseases in the opposite sex, and that inflammatory conditions of the ear might be alleviated by one of their pharmaceutical specialties, composed of "the delicate admixture of the excrement of pigeons and the ashes of horses' dung, to which might be added finely pulverized black pepper."

Judging from the statements of patients, there still exists among some of the profession a belief, which is largely shared by the laity, that something mysterious or magical surrounds the diseases of the ear and their treatment. With this opinion prevalent we cannot express surprise at many of the unfortunate sufferers volunteering the information that they had been advised to "*Let well enough alone*;" "*it is bad to meddle with the ears*;" "*do not tamper*;" "*never heal a running ear or it will go to the brain and kill you*."

It is also of daily occurrence to find that the syringe has been roughly used to throw a stream of water on an *exposed drumhead*, or that the popular but uncleanly habit has been suggested and

followed of dropping greasy and other fungus-generating fluids into the ears.

This evident lack of information is, of course, due to the fact that in former years in many of our medical colleges otology had received only the minimum consideration, while in some institutions this most important branch of medicine had not even been mentioned in their curriculum. So long as students are not required to pass an examination on aural or other diseases it will be found that their knowledge of the same is almost *nil*.

It is indeed gratifying to be able to note the increasing interest and demand for special instruction on the ear and its diseases. To the recent graduate in medicine a knowledge of this branch now becomes imperative, as many of the State Examining Boards require applicants to pass an examination on otology.

From a medico-legal standpoint the subject is of the utmost importance, for certainly the time is not far distant when it will be regarded as illegal for one to so neglect a suppurative disease of the tympanum (either acute or chronic) that fatal cerebral complications result therefrom. Brain abscess and meningitis, as the result of ear diseases, are in the great majority of cases preventable. It, therefore, becomes the imperative duty of every practitioner of medicine to properly diagnose and treat such cases. This duty is especially important to the physician of general practice, inasmuch as he is usually the first to be consulted, and his direction and care of the patient at that critical time is often of vital importance.

In order to give an idea of the importance of ear diseases in their relation to general medicine and the responsibility and duty of the profession at large to the public, it will be interesting to note that it has been estimated by various authors that from 43 to 76 per cent. of all brain abscesses arise, either directly or indirectly, from suppurative disease of the middle ear. To this I should like to add that the same figures would probably not

\* Read before Philadelphia County Medical Society, 1893.



exaggerate the large number of cases of meningitis and 'pyæmia which, on account of their doubtful etiology, are termed and accepted as "obscure." Barker, as quoted by Keen and White, estimates that not far from two thousand deaths, caused by diseases of the ear, annually occur in Great Britain, with a population of little more than one-half that of the United States.

These are, indeed, impressive figures, and are especially deserving of serious consideration, from the fact that there are annually dying in the United States probably four thousand of her inhabitants from brain abscess, the direct cause of which is some pathological change in the ear. Our belief is that should these cases receive early recognition and proper care the mortality, at least, would be greatly reduced and the fatal complications in most cases be prevented.

As a rule, an acute inflammation of the tympanum is painful in the extreme; and yet it must not be forgotten that we will at times find a case where the membrana tympani will rupture with the consequent flow of discharge, which will be the first and only symptom to attract the patient's attention. These cases, however, yield promptly to treatment, unless dependent upon some enfeebled condition of the constitution. On account of the symptoms not being urgent they attract but little or no attention, and, therefore, are allowed to form a good foundation for a chronic purulent suppuration with all its possible serious consequences.

An acute suppurative otitis media is usually the result of the acute non-suppurative variety (commonly known as earache) the symptoms of which briefly are, a sense of fullness in the head accompanied by more or less tinnitus and so-called "neuralgia." In my experience these symptoms precede the real pain several hours, or in some cases it may be several days. The pain, which is very severe, generally occurs at night, and is referred to the ear and along the Eustachian tube. In most cases considerable fever is present, and marked impairment of hearing. As the pus accumulates the bulging outward of the membrana tympani correspondingly increases, and the tension resulting therefrom intensifies the pain almost beyond endurance. It is in this state or stage of the disease that

immediate relief is so earnestly demanded for the present and future welfare of the unfortunate sufferer.

Should the patient have the good fortune to have the distended drum promptly punctured in order to promote the free escape of pus, and this followed by gentle inflation through the Eustachian tube, together with general antiseptic care and the use of leeches, the hearing will in most instances be quickly recovered, the discharge will cease, and all the functions of the organ will soon be re-established.

If, however, the pus is not promptly evacuated the patient is in imminent danger of one or more of the serious consequences that follow such neglect. Should the drum be so thickened and bound down by adhesions as to enable it to resist the pressure, as is sometimes the case, the pus will then, by one of the several means of communication, produce a septic inflammation of the brain or its coverings, which usually has the result of a prompt fatal issue. Or the pus may communicate with the mastoid antrum, thence to the mastoid cells, thereby subjecting the patient to all the serious, and oftentimes fatal, complications of a such a condition.

Fortunately, however, these complications are not of frequent occurrence from acute suppurative otitis media, for, in neglected cases Nature has wisely provided a drum that will usually rupture of its own accord when the pressure for accumulated pus reaches the dangerous point; or, as it occasionally does, the pus finds an exit through the Eustachian tube into the throat. This is particularly the case in children, because the calibre of the tube is proportionately much larger in early life.

Brain and mastoid complication arising from a suppurative inflammation of the ear are in nearly all cases a result of the chronic variety, although I have seen several fatal cases from the acute suppurative form. There is usually a history of chronic discharge, frequently even extending over many years. At times the "running" will cease, and the physician and patient (if he be under treatment) will congratulate themselves on the apparent success of their therapeutics, when quite unexpectedly the patient again applies for relief from a severe pain in the ear, caused either by exposure to cold or

wet, or it may be from some trivial accident, such as a slight blow upon the ear or head.

Any patient suffering from a suppurative otitis media, be it of the continued or recurrent form, is in constant danger (either from exposure to cold or traumatism) of a fatal termination. "Many apparently unaccountable cases of fatal coma are explained in this way; an old cerebral abscess, which has already lasted weeks or months without giving rise to any definite symptoms, suddenly giving away and bursting into the ventricular or subarachnoid space." It is, therefore, a safe and wise rule, as well as duteous teaching, to regard every person with a discharging ear, as being in such a condition that serious, or even fatal, complications may arise on the slightest provocation.

Recent bacteriological investigations demonstrate beyond question that the quantity and especially the quality of the discharge is an all-important factor in considering the prognosis of individual cases. The popular impression is that so long as a discharge is copious and devoid of fetor it is harmless, and of such little moment as to demand treatment only from a point of tidiness or inconvenience. This belief, notwithstanding its almost universal acceptance, is misleading and is calculated to cause in the future as it has done in the past, much misfortune.

It is entirely true that in a freely "running ear" we have present the best possible condition to prevent brain complications, and yet we must not lose sight of the fact that a decrease in the discharge, and especially if it should stop suddenly, must be viewed with some degree of alarm, inasmuch as this sudden or more gradual decrease in the flow is frequently caused by inspissated masses of mucus and pus collecting behind a wall of dried and hardened epithelium intermixed with pus, and entirely occluding the opening in the ruptured drum, consequently preventing the escape of discharge which continues to form until the accumulation causes much pressure, and the brain or mastoid complication may be the result.

Generally speaking, a discharge of pus without fetor is considered harmless, and, therefore, in most cases receives little or no notice, unless for cosmetic purposes. Although the number of observations on the pathology of the

putrefactive changes within the ear have been limited and confined to the researches of only a few investigators, sufficient information is at present made known from the recent discoveries in micro-biology to establish the fact that non-fetid pus from the ear contains large quantities of pathogenic cocci, and is, therefore, highly infectious and dangerous to life. In fetid pus it is true that cocci are also found, but they are of the diplococci variety, and the bacilli which are also present largely predominate.

Barker, who has given this subject much thought and study, writes as follows: "From his inoculations of animals with cultivations and pus emulsions Rohrer came to the conclusion that the various forms of bacilli found in the fetid secretions of the ear were not pathogenic but simply saprophytic, the animals inoculated with the bacilli either in the tympanic cavity, the auricular veins, or the peritoneum, being alive and well at the end of some months, little or no action having taken place locally. But of the pathogenic nature of the cocci there could be no doubt, from his experiments on animals typical septic diseases of various kinds being produced without fail. These observations appear to me to possess a special interest as regards the question of fetor from the ear. It has been commonly taught hitherto that a bad smell from the ear is an important factor in the prognosis of aural inflammations. My own observations, however, for a long time past have led me to question this conclusion very seriously, and to hold and teach that some of the most dangerous sequelæ of otitis media may be met with where the secretions from the tympanum are either nearly or quite odorless."

"If this be true, and I fully believe it to be so, the explanation is found in Rohrer's observations regarding the pathological cocci found alone in the non-fetid discharges, and the preponderance of merely saprophytic bacilli in the fetid. We must not, therefore, think the less seriously of a discharge from the ear because it is odorless, but must endeavor to get rid of its exciting cause just as strenuously as if it were most offensive. This is only what we might expect from an experience of ordinary suppurating wounded surfaces in other parts, which in many cases give rise to serious or fatal

septic complications without giving off any fetor."

Caries and necrosis are a frequent and serious complication of suppurative otitis, and are produced by ulceration of the inflamed mucous membrane of the tympanum, by extending to the deeper layers of that membrane (which act as the periosteum on the inside of the osseous cavities) and finally attacking the bone itself.

Politzer describes the process as "an infiltration of round cells into and around the fibrous tissue which penetrates the substance of the bone as offshoots from the mucous membrane. These round cells may undergo three transformations: they may break up and be absorbed, they may be converted into connective tissue in which depositions of lime may take place, and we then have a thickening of the bone, or they may, by degeneration and erosion, produce an ulcerative osteitis. This ulceration may be due to constitutional taint, or to retention and decomposition of secretion, or to the catarrhal ulceration and wasting of the mucous membrane."

As the carotid canal (through which passes the carotid artery) forms the anterior wall of the tympanic cavity, and the jugular fossa (in which lies the bulb of the jugular vein) constitutes the floor of the tympanum, it will be readily seen why dangerous and even fatal hemorrhage may occur as the result of caries and necrosis of the middle ear. The bony walls of the tympanum are always thin, and in some cases the roof is entirely absent. The middle and back part of the temporo-sphenoidal lobe and the outer and front part of the lateral lobe of the cerebellum are in direct contact with the middle ear. Knowing this intimate relation of the tympanic cavity to the brain to exist, it does seem surprising that many more fatal results from inflammatory diseases of the temporal bone are not recorded.

As the skin of the external auditory canal (being somewhat modified) is continuous with and forms the outer layer of the membrana tympani, suppurative otitis media may be set up from without as well as by infectious matter reaching the tympanum through the Eustachian tube, the mucous membrane of which is continuous with that of the throat and forms the inner layer of the drum. And, as many

of the mastoid cells lie below the level of their opening into the middle ear, and the floor of the tympanum is in part below the orifice of the Eustachian tube, it will be seen how a suppurative disease of the tympanic cavity, or even the mastoid cells, may continue in a chronic state for months or years.

In suppurative otitis media brain abscess may be induced by direct continuity of structure, or the infectious matter may be communicated to the dura mater, causing subcranial abscess or diffuse meningitis, or to the bloodvessels in the diploe giving rise to osteo-phlebitis, thrombosis of the lateral sinus, or pyæmia. Or, as is the case in suppurative otitis externa, likewise in neglected otitis media, the pyogenic germs may find their way between the opening formed by the non-union of the vaginal and mastoid processes, thus producing a superficial mastoid abscess.

Through carious involvement of the malleus and incus there is frequently a direct communication between the tympanum and the mastoid antrum and cells, this being the usual way in which pus invades these cavities and forms a true or deep mastoid abscess.

There are many other routes along which the infection may travel; it may extend through the hiatus fallopii or the aqueductus vestibuli, or down the internal auditory meatus, or it may extend along some of the numerous small veins which run between the internal and middle ear on the one hand, and the dura and pia mater on the other.

I will now briefly relate one interesting case of mastoid disease following an acute suppurative otitis media.

On March 26th, 1892, I was called to see Mrs. L. B. and found she had been suffering from a severe pain in the left ear and head for two weeks. On inspection nothing could be seen that would suggest a forming abscess of the middle ear, and as the pain in the head was so general it quite deceived the attending physician. On examination through the meatus we found a greatly inflamed drum and bulging of Shrapnell's membrane. We immediately opened the drum, which allowed a free escape of pus and greatly relieved the patient's pain. This was followed by leeches in front and blisters behind the ear; after which hot poult-



tices were applied to promote suppuration. From this line of treatment entire relief was obtained for five weeks (but the ear continued to discharge), when pain was complained of over the mastoid; in fact, it involved the entire left side of the head.

The usual active measures were at once adopted to relieve pain, but the brief cessation of suffering was only while under the influence of drugs. (It is well to state that neither the mastoid nor any part of the head showed any evidence of either redness or swelling). Three weeks later she expressed her willingness to submit to an operation, and, with the kind assistance of Dr. J. M. Barton, I opened the mastoid cells, evacuated the pus, and found, by using the syringe, that the opening in the mastoid communicated with the external auditory canal. This established perfect drainage, which relieved the patient of all pain and discharge, but the hearing was found to be destroyed.

In August we removed the drum and ossicles, which resulted in the almost immediate restoration of her hearing, which remains normal at this writing.

As all inflammatory conditions and abscesses of the brain are most serious, and especially so when dependent upon disease of the temporal bone, it, therefore, becomes our imperative duty to make every effort to prevent these unfortunate complications, rather than to hope for their relief after having once developed.

It is not the object of this paper to enter into the subject of treatment from a general surgical point of view, but simply to offer such suggestions as are thought to be in a measure preventive, for it must now be admitted that many of the serious complications arising from diseases of the ear have much to commend the probability of their being preventable. As already shown, the majority of brain and mastoid diseases are due to a suppurative disease of the tympanum, and are usually the result of the chronic from of discharge.

Most cases when applying for treatment give the history of a "running ear" extending over months or years, and that it has resisted treatment in the hands of many competent physicians. In cases of chronic discharge from the ear that do not yielded to due and proper care it is

now our rule to advise the removal of the drum and one or more ossicles.

By this surgical procedure we establish a free drainage and make an opening into the tympanum sufficiently large to admit of the site of the disease being properly treated by antiseptic washes and applications, and, if this interference be established before brain or mastoid complications have set in, these developments will almost surely have been prevented; besides, the discharge in nearly all cases will cease, and the hearing in the majority of patients greatly improve, while in others it becomes quite normal.

Or, if you have a case presenting symptoms of cerebral irritation or abscess where there is a chronic "running ear," and it does not yield promptly to the above measures in conjunction with leeches to the mastoid, etc., it may be due to pus confined in the mastoid antrum, and no time should be lost in making an incision over the mastoid and trephining the same half an inch behind and above the centre of the external meatus. Within the past year I have seen five cases relieved by this method of treatment. In suspected mastoid disease an incision down to the bone is often delayed too long, and, perhaps, is never done too soon.

#### Destruction of Microbes by Infusoria.

D. Harvey Atfield (*Brit. Med. Journ.*), a student in the Hygienic Institute of the University of Munich, recently carried out a number of experiments at the suggestion of Dr. Emmerich for the purpose of determining whether microbes of polluted river water are destroyed by infusoria. The experiment shows very clearly that the low forms of animal life which abound in river water are exceedingly active in the destruction of bacteria, and hence of service in the purification of water. In one instance, water which contained 3,000,000 bacteria per cubic centimeter ( $\frac{1}{4}$  dram) was found to contain at the end of ten days after infusoria was introduced only 13,000 bacteria, a proportionate decrease of 200 to one. In another case the decrease was 500 to one. In another case of water placed under the same conditions, without the infusoria, the number of bacteria increased from 700 per cubic centimeter to 121,500.



## SOCIETY REPORTS.

### SECTION ON ORTHOPÆDIC SURGERY OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

*Meeting November 17, 1893.*

Dr. J. B. Deaver exhibited a patient showing the result of subcutaneous osteotomy of the neck of the metatarsal bone for hallux valgus and gave the history of the case.

#### DISCUSSION.

Dr. H. Augustus Wilson opened the discussion by exhibiting a cast of a similar case in which there was extreme hallux valgus of the right foot, the metatarsal bone being decidedly pushed from the normal position underneath the second biceps. It was originally the intention to amputate the toe. A bursa was present on the right foot, and this was found to be a segment of the joint, which the patient had opened thinking it a corn, or a bunion. The pain was excessive.

DR. T. G. MORTON: The cases of this form of toe distortion which have come under my care have generally been accompanied by serious joint disease, so much so, that excision of a wedge including the entire articulation was required. I have never performed osteotomy which is at once so simple and efficacious for the moderate forms of the malady. I believe that in the great majority of cases that the operation as performed on the patient before us, which has been so eminently satisfactory is all that generally would be required.

DR. G. G. DAVIS: Dr. Deaver speaks of the shape of the shoe as being the cause of the deformity, but I cannot fully agree with him. In some of these cases there is a marked rheumatic element. I do not think it is *always* produced by pressure. I cannot believe that an ill-fitting shoe alone, in all cases, produces it. There is often some rheumatic condition in the neighborhood of the joint.

DR. DEAVER: In answer to Dr. Morton, I confess I have not done osteotomy on so pronounced a case as the one referred to, but my deductions from the literature on the subject and from my experience with the operation, are that it would fulfil the indications in the case referred to. I have no doubt of its superiority over amputation and that we can promise the patient a good

result. We all know there is a great objection to amputating the great toe, therefore, the more conservative operation is the better one if it can be done. We also need to note the absence of evidence of adhesions in the joint after the osteotomy.

In my own case, the condition was the result of a frost bite, but I believe with Dr. Davis, that a rheumatic element is to be considered. In any case where the deformity exists, the sooner it is corrected the better. I do not believe in any of the ordinary appliances; all of them are unsatisfactory; they make the shoe large and unwieldy and simply add to the existing deformity. The operation is not attended with any risk. We all have operated upon cases of knock-knee where there was greater deformity and made good corrections.

Dr. Wilson's illustration of the prominent head of the metatarsal bone being mistaken for a bunion only shows how careful the general practitioner should be, and in any case of doubt refer it to an authority.

Dr. T. G. Morton brought before the Society a very unusual instance of

#### GENERAL BODILY DEFORMITY, WITH ANKYLOSIS OF THE SPINE, UPPER AND LOWER EXTREMITIES, ETC.,

in which he asked the attention of the members as to the possibility of any operation affording improvement, and gave the following brief history of the patient:

"In July last I received a note from Dr. Wright, of Gipson, Alabama, asking for permission to send to the Orthopædic Hospital a case of deformity in an adult which was thought could be improved. As it was impossible to obtain an exact description of the case, the patient was allowed to come North, and accordingly he started on his journey; first riding fifteen miles in an ox-team, then without change to this city. He was so deformed that he had no use of his lower extremities and was confined in a sitting posture

in a rude, home-made chair which he constantly occupied. The following notes of the case were taken by Dr. Walker, of the Hospital.

*Family History:* Amos C. G., aged 32, of Gipson, Alabama. Parents living. Father æt. 55, has had rheumatism from boyhood. Mother æt. 65 years, suffers almost continually with neuralgia. Two brothers living, both have had rheumatism.

*Previous History:* Patient was always well until ten years old, when he had an attack of rheumatism commencing in the right hip-joint; the knee-joint of the same limb was involved, then the ankle, and later the joints of the left lower extremity, spinal column, and finally both shoulders, elbows, wrists, and to a less degree the fingers and toes. The extension as above described occupied a period of three years, during which time he suffered intensely and could be moved only with great difficulty. Joints were hot and swollen—fever moderate. His limbs were in one position during all this time, though not then ankylosed; he says that he could move but the effort caused intense pain.

At the end of three years, 1874, the pain became less acute, gradually lessening until the year 1885, at which time he says no rheumatic pain remained, but the joints were stiff as at the present time.

During the years of his first attack (from 1871 to 1874) he spent much of his time in an ordinary chair, leaning upon the arm of the chair which was placed along side of him, this position evidently accounting for the lateral curvature and some of the deformity of the trunk now seen. In 1874 he had a chair made of the same pattern as the one now in use, but for a time had to support the greater part of his entire weight by the arm pieces (two pins, one beneath each shoulder joint) because of the pain in the hips and spine if those joints were subjected to any strain. This would explain deformity seen here (elevation of shoulders).

This chair was made with a cross piece passing beneath the knees for support. Femora found curved at this position. In 1886 had another attack of rheumatism affecting principally the shoulder joints and those of the neck. Several joints have been affected at different times since then.

*Present state:*—Head normal in size and shape; wears  $7\frac{1}{2}$  hat.

Trunk undersized and mis-shapen, an-

tero-posterior and lateral curvature of spine which is perfectly rigid.

Legs flexed on thighs, almost in contact; thighs on pelvis and in contact with abdomen; and pelvis upon the thorax; the anterosuperior spinous processes of the ilia being almost in contact with the lower ribs.

All the joints of the lower extremities are firmly ankylosed with the exception of the phalanges.

The right arm can be bent at an angle of  $45^\circ$  with the shoulder. The right elbow is fairly ankylosed, no pronation or supination. The left arm can be brought to a right angle with the trunk at the shoulder; left elbow firmly ankylosed about at a right angle; pronation and supination normal; wrist and phalangeal joints normal.

Weight,  $52\frac{1}{2}$  pounds; Measurements: Height from top of head to lowest part of body as he sits in chair, 22 inches; right calf,  $5\frac{1}{2}$  inches; left calf,  $5\frac{1}{2}$  inches; right arm,  $5\frac{1}{2}$  inches; left arm,  $4\frac{1}{2}$  inches; right fore-arm, 6 inches; left fore-arm,  $4\frac{1}{2}$  inches. Appetite fair; digestion well performed; tendency to constipation. Heart, liver and lungs normal; urine highly acid; sp. gr. 1030; excess of urates; no abnormal constituents.

I shall be glad for the members of the society to examine this patient and then to give their views as to the possibility of any good being attained by operative interference. From a careful study of this case I feel that little if any improvement can be secured by any operative treatment on account of the inability of the man to use his arms to any extent, the ankylosis of the spine which precludes any movement of the body, and finally the excessive atrophy of the lower extremities, which, even if brought out straight, would not support the weight of the body. Probably the best that can be done will be to give him a suitable apparatus to support his arms as an attachment to a proper spinal brace.

#### DISCUSSION.

DR. H. AUGUSTUS WILSON: Dr. Morton speaks of the possibility of reproducing one of his successful experiences, and, after bringing the legs down, of adjusting artificial limbs. It seems to me that osteotomy in this case would be an unwarrantable procedure, even if the legs were brought into good position, the curvature of the spine, the rigid pelvis, and the position of the head to one side,

would make the result one of disappointment even if osteotomy in itself were successful. I am rather of the opinion that a wheeled chair would be the best thing for him. He has probably sufficient motion of the shoulders and hand to enable him to move a chair about. Something similar to the chair he now uses, with wheels added, would be a wise arrangement so that the patient could have more freedom of motion. The outdoor life thus induced, as well as the movements of the arms in propelling the chair, would be decidedly beneficial. In the sitting posture he could adopt some occupation by means of a movable shelf attached to the chair, and thus be relieved of the strain of idleness.

DR. FRANK WOOBURY: Rheumatism in children is not a very rare affection, but this patient certainly presents conditions rarely met with, and is a most interesting case. Probably it would be more correct to regard it, not as a case of rheumatism but as an illustration of arthritis deformans in an advanced stage of the disease. As the patient is now thirty-two years of age, and has been suffering for twenty years, or more, of course the long course of the disease would be against any marked benefit arising from an operation, especially as there is only infantile development of the lower extremities. Regarding it as chronic arthritis, we recall the fact that in these cases, cod-liver oil, massage, gymnastics, hot applications, and electricity to improve the muscular tissues are able to accomplish much good. By directing such treatment, especially to the upper extremities, he might gain sufficient range of motion to feed himself or to propel himself in a wheel chair and get more comfort out of life. It must, of course, be determined, surgically, whether there are any fibrous adhesions in the elbow or shoulder joints which could be broken up by forcible flexion, but as regards anything in the way of operation, I think that more radical measures might safely be postponed until the limit of improvement by the treatment just outlined, has been attained. Certainly a six months' course of medicine would put him in better condition for operation, even if it were determined that such proceedings are necessary.

DR. G. G. DAVIS: What struck me in looking at this case is the fact that the patient appears to be in a moderately

healthy condition and would very likely stand operative procedures well. It would be a great gain if he could be made to stand upright. Failure might arise, of course, from sepsis, etc., but the advantages from straightening the extremities would be so great, and his health appears to be so good, and the dangers from osteotomy so small, that I think some operation might be undertaken. His condition could hardly be worse and he might possibly be benefitted; to what extent, I am unable to say, but it might be worth the attempt.

DR. H. R. WHARTON: I would like to ask Dr. Morton if he would have any hesitation in giving this man an anesthetic. It seems to me that I should have some anxiety in doing so. So far as osteotomy is concerned, certain corrections might be made but I do not really see how the condition of the patient could be much improved. I do not think much motion could be obtained. I am inclined to think that the judicious course would be to make him comfortable by a mechanical contrivance. I have had considerable experience with osteotomies, and the wounds usually do well, but in some conditions of the tissues, sloughing occurs, and the patient is very sick from the operation itself. I should be rather inclined not to operate.

DR. DEFOREST WILLARD: In my judgment it would be doubtful whether the patient would be able to manage artificial limbs even if his legs were put into good position. Necessarily the artificial legs would be heavy, and I doubt whether he would be able to balance himself since his back and neck are so rigid. Osteotomy is as operation, simple in itself and not attended with any special danger.

I know of a case in this city, not quite so much deformed as this one, but having its origin in rheumatoid arthritis. It did not occur so early in life but otherwise it is quite similar. Nothing could be done for the patient. Another case is that of a man so much deformed that he has lain in bed for twenty years. The disease in him is aroused by any attempt at motion of the joints.

DR. J. B. DEEVER: I should hesitate to change the topography of the blood vessels on account of a cardiac diathesis. Several osteotomies would have to be done, and it is a question in my mind whether any great gain would be secured. The bones



are particularly small and I question whether they would be able to endure any weight even if they were straightened.

DR. T. G. MORTON: In again referring to the question of anesthesia, I would like to ask if any of the gentlemen would fear to administer ether in such a marked case of spinal curvature; especially in so serious a case. The only case of sudden death, under ether, that I ever witnessed was in a patient at the Pennsylvania Hospital; within thirty minutes after operation the patient died from oedema of the lungs very suddenly. My own feeling is that there would be a great risk in this case and that the suggestion of a wheeled chair would be the best plan to follow.

RESECTION OF A RIB FOR EMPYEMA FOLLOWED BY LATERAL CURVATURE OF THE SPINE.

Dr. G. G. Davis exhibited a boy in whom two ribs had been resected and there was a resultant lateral curvature. He showed an apparatus which had been adjusted for the purpose of reducing the projection arising therefrom. The jacket was adjusted so that it made pressure on the pelvis, in the axillary fold, and counter-pressure on the opposite side by a pad.

DISCUSSION.

DR. DEFOREST WILLARD: I should like to ask Dr. Davis whether I understood him to say that the deformity would probably grow worse as time goes on? My experience is that such deformities tend to improvement. I had occasion a few weeks ago to examine a case upon which I operated in 1872 for empyema, a girl then five years of age. Suppuration continued for six months and there was great deformity at the time; yet the patient has become absolutely straight and I had difficulty in determining upon which side the operation had been performed. In a number of other cases, the same result has been obtained and the improvement has been very marked under exercise and expansion of the lungs, which probably is the most important element.

In regard to the use of apparatus I have to say that I have never seen the deformity following empyema benefitted by any form of appliance. I rather look upon it as injurious by interfering with expansion of the lungs. I have always used some form of exercise with marked benefit.

DR. H. AUGUSTUS WILSON: I would like to say that it appears to me that this case has reached the stage in which there are present all the conditions of idiopathic lateral curvature and marked rotation with the usual distortion of the thorax. It is a question whether apparatus does not tend to still further produce muscular atrophy and whether the chest will not decrease in size, the lateral curvature and rotation becoming more pronounced. The question is not settled in my mind whether most of the muscular atrophy is produced by scoliosis or by apparatus.

This particular apparatus has, in my judgment, one serious objection; the straps passing over the shoulders. The shoulders are brought into line by simple downward pressure even when there is a crutch resting upon the hips. Mothers will loosen the straps around the waist to give the child more comfort and the apparatus is therefore sure to drag still further upon the shoulder straps. The shoulder straps prevent a displacement of the apparatus, even when the lower bands are loose, and therefore they should be dispensed with. It is my experience that apparatus too often only conceals the deformity beneath but does very little in the way of correction.

DR. T. S. K. MORTON: I do not think I have had a case which improved under apparatus. I have obtained good results from the application of head extension at night with suspension at times during the day.

In regard to the use of a bicycle, of which Dr. Taylor speaks, it is a question, in my mind, whether this is wise, as we are already noticing in literature reference to a condition of kyphosis to which this kind of exercise gives rise.

DR. J. B. DEEVER: My experience fully accords with Dr. Wilson's. I have operated upon a large number of cases, many of them tuberculous; others resulting from pleurisy.

Relative to the lateral curvature which follows, I would say that most cases recover. I advise against appliance under the circumstance; I believe it to be a serious matter to interfere with chest expansion. Ordinary appliances are misleading, and, to my mind, do harm, often resulting in paraplegia. If support is required, my plan is to use plaster of Paris bandage the length of the spine, and at the end of a month I replace it by another



and the patient is thus straightened every time the bandage is altered. Those of us who are familiar with Dr. Adams' dissertations, know that he lays great stress upon this point, unless there is actual disease of the vertebral column.

DR. G. G. DAVIS: The deformity in the case shown to-night has been more marked lately than it was a few weeks ago. I do not think that it will increase as time goes on, after sound healing has taken place and the lung begins to expand, but I am of the opinion that an apparatus for the resultant curvature is of marked benefit in the treatment for the condition as now present.

Some of the remarks made to-night apply to cases of pure lateral curvature and not to such a condition as that of the case exhibited. Dr. Deaver refers to paraplegia following the use of apparatus. To this I would say that perhaps paraplegia may follow lateral curvature but I have never seen it as such a result.

As to the question of the use of a plaster jacket or brace, that is a matter of opinion: I do not think that this question has been definitely settled yet. When we find such men as Bradford, of Boston, and others, describing them one cannot regard apparatus as being always out of place.

In regard to this special case I do not see that healing would be delayed by an appliance. There is a projection on one side which is quite marked. I can see how expansion would be hindered by having the chest encircled by bandages, but in this jacket there is no constriction of the chest. It is the pelvis which is embraced and pressure is made over the projecting side and not the constricted one.

Dr. Wilson's suggestion in regard to the shoulder straps is a good and practical one, and I will watch the case to see that displacement does not occur. I would not, by any means, urge the continual use of such apparatus, but in the early period of recovery where the sinus has not healed, or just healed, I think it is good treatment, as without it, I think, in a comparatively short space of time, the deformity becomes more marked. I do not believe in substituting for exercise any mechanical appliance because I think nothing can take its place. Where an apparatus is supported from the hips, and there is no pressure made on the contracted chest, and the apparatus is

capable of removal, if so desired, for exercise, I do not think it would at all hinder the recovery of a case.

DR. W. J. HEARN reported a case of

#### SUPPURATION OF KNEE-JOINT

that he operated upon by free incision and washed out with 1-2000 bichloride of mercury solution. The patient made a rapid and complete recovery, ultimately obtaining full usefulness of the joint. Dr. Hearn advocated early and free incision for exploratory purposes because it enabled the surgeon to effectually evacuate the contents of such an abscess—and prevent its rapid destruction of the joint.

#### DISCUSSION.

DR. DEAVER: This particular case is interesting for the reason that last winter I saw, with Dr. Lloyd, a case of middle ear disease in which there was pronounced sepsis. I opened the abscess and removed pus; this Dr. Abbott examined for micrococci but without finding bacilli. I should rather take exception to Dr. Hearn's remarks that he thinks this treatment wise in all cases. I scarcely think that in all cases it would give good results.

DR. T. S. K. MORTON: I hardly agree with Dr. Hearn in advocating the use of strong a solution as 1-2000 bichloride of mercury. My experience is, in using antiseptics in joints, that they are a source of danger; that it is not possible to use such a strong solution without producing lesions. Iodoform appears to me to be the best antiseptic to use; in fact I do not use bichloride for washing out joints, as I find simple boiled water to be quite effective and without danger of doing harm. In using strong antiseptics there is a possibility of producing synovitis.

DR. R. B. CRUISE: In May 1892, I saw a case of a girl age three years, who had a suppurative knee-joint. She had been taken to the University and to the Children's Hospitals and had been told that nothing could be done except to amputate the limb. I opened the joint, passed a probe through to the opposite side and then injected the joint with peroxide of hydrogen, twice a day. At the end of thirty days the wound closed and I applied a splint. I did not see the case again until September, when the child was running about and appeared perfectly healthy. There was perfect motion in the joint.

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SATURDAY, DECEMBER 16, 1893.

## EDITORIAL.

### IDENTITY OF THE STREPTOCOCCUS PYOGENES AND THE STREPTOCOCCUS ERYSIPELATIS.

Knorr (*Berliner klin. Wochenschrift*, 1893, p. 698) has reported the results of a comparative study of these two streptococci. The streptococcus pyogenes was isolated from the pus from an abscess which resulted from a slight injury to the great toe of a man of about forty years. The suppuration was accompanied by intermittent fever, high temperature and rigors. Later an abscess developed beneath the skin of the right thigh. From the pus from this abscess a pure culture of a streptococcus was obtained. It grew in long chains and was pathogenic for mice. Other pyæmic abscesses developed.

Four weeks after the attack of illness a severe rigor occurred with fever and the appearance of a typical erysipelatous eruption about a bed sore over the sacrum. Two days later isolated areas of erysipelatous nature were observed. From these pure cultures of a streptococcus were obtained. Cultures made from the blood did not develop. The two streptococci, one from the primary abscess, the other from the erysipelatous inflammation were

identical in their morphology, cultural characters and in their pathogenic properties. The author believes, therefore, that this case demonstrates, more clearly than has heretofore been done, the identity of these two streptococci.

The fact has been known for a long time, that the difference between these two streptococci was very slight, as the description of one will apply to the other save perhaps, in the pathogenic properties. Bacteriologists have not been agreed as to the identity of these two important organisms. The results of a few other investigators concerning their identity are interesting. Prudden (*The Amer. Jour. of the Med. Sci.*, 1889, p. 229) compared very carefully the *streptococcus pyogenes* and *streptococcus erysipelatis*, but found that there was not a single constant feature of difference between them that could be detected by cultural characters (parallel cultures), or by inoculations into the smaller animals. Fraenkel (*Centralblatt f. Bakteriologie u. Parasitenk.*, 1889, Bd. vi. p. 691) isolated from a case

of purulent peritonitis a streptococcus which had apparently been the supplicative agent, and succeeded in producing erysipelas on the ear of a rabbit with a pure culture of the same streptococcus. When it was inoculated beneath the skin on the back of mice and rabbits it produced supuration. This case is analagous to the one described by Knorr. Welch (*The Am. Jour. of the Med. Sci.*, 1891 p. 439.) compared these two streptococci, but was unable to detect any difference between them. He adds "The efforts to differentiate into distinct species the pathogenic streptococci have thus far met with little success, so that the weight of opinion favors the view that the streptococci of erysipelas, phlegmonous inflammations, septicæmia, puerperal fever and the various forms of angina belong to one and the same species."

In an article published in the *Supplement of the Report of the Local Government Board*, London, 1887, Klein discussed the

various properties of a large number of streptococci which he had isolated from various sources. Among them were the two species under consideration. The results which he obtained led him to conclude that there was a difference between these two organisms. More recent writers, however, tend to group the streptococci rather than to differentiate closely allied if not identical species. This is important in view of the large number of affections that have been attributed to the action of certain streptococci. The experiments of Knorr are exceedingly interesting, yet he does not fully establish the identity of the two species as it was possible that there was a mixed infection. Pasquale (*Beitrage zur path. Anat. u. zur allgemeinen Path.*, Bd. xii, 1893, p. 433), in an exhaustive study of streptococci, points out the fact that two streptococci which were capable of being differentiated were found in the different organs of the same animal.

#### SHOULD THE PRACTITIONER SUPPLY HIS OWN MEDICINE?

In reply to this query it must be said that, in the present state of medical affairs, as a general rule, in a vicinity amply supplied with competent pharmacists, the practitioner has no right to compound or to carry drugs to dispense with his own hand to the patient.

Holy Writ says that "the laborer is worthy of his hire." And so is the trained, qualified pharmacist. Pharmacy and medical practice, while a close affinity subsists between them, are separate and independent branches of the healing art.

The physician in a large city, who carries and dispenses medicines, by that act loses caste, he does an injustice to his patient, and appropriates to himself what justly belongs to the druggist who depends largely on prescriptions for his support.

It is alleged that the physician saves the patient the expense of prescriptions and so retains him. But the fact is he fails

in both. In very many cases he might as well dose his patients with fragments of chips, pebbles or other inert substances as to give him the stale, petrified tablets which, with time, have lost their potency. His patient has no respect for the preacher-practitioner combination, nor has he any enduring faith in the walking apothecary shop, hence, when he is really seriously ill he will pay only for the straight article.

"Let the shoemaker stick to his last" is an old and true saying. If we would stop counter-prescribing, the pharmaceutical treatment of gonorrhœa and amenorrhœal (?) troubles, then we must give to the honest pharmacist what justly belongs to him. Pharmacists as a class are appreciative, and no physician ever patronized one and was not repaid two-fold. What we have said does not apply to the country practitioner, nor to the use of emergency drugs for night practice.



## BACTERIOLOGICAL NOTES.

## THE PYOGENIC PROPERTIES OF THE TYPHOID BACILLUS.

In a paper by Hintze (*Centralblatt. f. Bakteriologie u. Parasitenkunde*, XIV, 1893, p. 445) on the duration of time and suppurating properties of the typhoid bacillus in the human body, are recorded a few interesting facts concerning the properties of the typhoid bacillus. A man was admitted to a hospital ten months after an attack of typhoid fever, on account of a swelling over the tibia which appeared first four months after the attack of the fever and had continued to increase in size. This swelling was found to contain pus from which cultures were made. These developed colonies of bacillus pyocyaneus and of the typhoid bacillus. The identity of the typhoid germ was determined by a very careful study of the organism. Hintze believed after a careful study of the organisms obtained that the typhoid bacillus was the only germ present which could have produced the suppuration. This conclusion

is contrary to those of Baumgarten and others who considered the typhoid germ to be devoid of pyogenic properties. The author cites another interesting case of typhoid fever where the patient died. The post-mortem showed that the cerebral meninges were in a state of purulent inflammation, and upon the examination of the pus only typhoid bacilli were found. Hintze brings forth reasons which he believes are sufficient to show that the pus was not produced by pyogenic cocci which had perished prior to the examinations. These observations led the author to draw the following conclusions:

1. That the bacillus of typhoid fever could live in the body for at least ten months.
2. That it is able to produce chronic post-typhoid suppuration.
3. That it can cause suppurative meningitis.

## TUBERCULIN IN TREATING PULMONARY TUBERCULOSIS.

Bey and Kartulis (*Zeitschrift f. Hygiene*, XV, 1893, p. 228) report the results of some very interesting work in the treatment of tuberculosis with tuberculin together with hygienic and climatic influences. They report 48 cases in which recovery was secured in 16 or 35 per cent. The article is a long one containing full details of the injections and their reactions, the condition of the patient as determined by physical examination, etc. The results which were obtained, as set forth in the conclusions drawn by the authors, are given:

1. Beginning pulmonary tuberculosis can be cured with tuberculin in from 3 to 4 months.
2. In more advanced cases of phthisis recovery is more slow, six months to a year being required.
3. Severe cases with not large cavities can, under good hygienic conditions, be cured.
4. Very bad cases with large cavities,

hectic fever, and night sweats, are not suited to tuberculin treatment.

5. Skin tuberculosis, as scrophuladerma or skin ulcerations are rapidly healed with tuberculin.

6. Certain forms of bone and joint tuberculosis, also gland tuberculosis, are rapidly cured with tuberculin alone or with the help of surgical interference.

7. Tuberculin is a dangerous material unless it is given in small doses in the beginning.

8. Small doses of tuberculin alone will not produce recovery of tuberculosis.

9. The Egyptian climate is well adapted for the treatment of tuberculosis.

10. The clinical treatment of lung tuberculosis with tuberculin is indicated only in light cases, in more severe cases the treatment must be more regular and persistent.

The authors lay much stress upon the importance of climate and hygienic influences in bringing about good results.

## TRANSLATIONS.

IN CHARGE OF M. B. WERNER, M. D., AND W. A. N. DORLAND, M. D.

## A CASE OF PHOSPHOROUS POISONING.

Dr. O. Seidle, Königsberg, Prussia, reports a woman who, being pregnant, dissolved the heads of matches in water, and drank the solution with a view of producing abortion. The dose was taken on the evening of Oct. 28th. On the morning of the 29th, she was attacked with violent vomiting and complete loss of appetite and was unable to take anything but water until her death, which occurred on Nov. 3rd. Having, on that day given birth to dead twins, she died suddenly during the expulsion of the second placenta.

An autopsy revealed a general hemorrhagic condition of the mucous and serous membranes, which were in many places emphysematous, the kidneys also showed hemorrhagic spots, and the pelvis was filled with coagulated blood; the bladder was empty; the uterus measured 21 cm. long, 15 cm. wide, and 6 cm. thick, was of a yellowish color except in places where hemorrhages had taken place. The liver was hard, light yellow in color, containing a moderate amount of blood; the gall bladder contained about a teaspoonful of of thin blackish-yellow bile. The mucous membrane of the small and large intestines, and pancreas were covered with hemorrhagic spots.

The thoracic cavity also showed many hemorrhagic changes. The pericardium was covered by numerous petechial surgingillations; beneath the endocardium, especially near the valves, free hemorrhages

had taken place. The same condition existed in the pleural cavity. The mucous membrane of the larynx and oesophagus were light yellow and hung in shreds. The brain was normal in appearance and no hemorrhages could be found in its membranes.

The points of peculiar interest in this case were the following:

The mother of the patient acknowledged that about one hundred matches had been used for the purpose, and that, in spite of the violent vomiting and loss of appetite, the patient worked until the 31st of October. The evening of that day she walked to the home of her mother, who lived in the same village.

The destruction of the vascular tissues, in particular, took place so rapidly that any pressure upon the integument was followed almost immediately by surgingillations.

Some hours before death a severe form of tachycardia set in, pulse 130 to 140 per minute, the temperature remained normal. No microscopical changes could be demonstrated in the nerve tissues.

Another point of interest was the prompt interchange of the poison between the maternal and fetal circulation.

This method of inducing abortion seems to be confined to the eastern portion of Prussia.—*Vierteljahr für gericht Med.* bund VI. heft 49-3. W.

## 'PORRO' FOR OSTEOMALACIA IN THE PREGNANT—RECOVERY.

A. P. Dekanski reports the patient, a multipara in the fourth pregnancy. The latter months of her second pregnancy had been accompanied by severe pains in the pelvic bones which ceased after completion of labor, but returned at the beginning of the third pregnancy; this condition made it necessary for her to remain in bed the greater part of that period. After labor the pains disappeared as before. The fourth pregnancy ushered in symptoms of greater gravity.

A careful examination disclosed the following:

The symphises approaching each other, formed a peaked-like projection. The rami of the pubis assumed a horizontal position parallel to one another, making it difficult for the examining finger to pass. The tuberosities of the Ischium were directed somewhat outward. The promontory of the sacrum could scarcely be reached. Pressure on the pelvic bone was painful. Pelvic measurements between the anterior

spinous processes, 22 cm., between the crests, 24½ cm.; external conjugate, 18½ cm.; diagonal conjugate, about 12 cm.; between the posterior spinous processes, 7 cm.; between the trochanters, 21½ cm. The uterus enlarged to about five months pregnancy. The patient miscarried soon after her admission to the hospital. The placenta however was not expelled and it was impossible to resort to manual means. The day following the labor, nature still failing in the expulsion of the placenta and the patient showing increased temperature, Dekanski concluded to operate.

He removed the entire uterus, ligated its ligaments. After removal he fixed the stump in the lower angle of the wound with sutures. The pains in the pelvic bones ceased on the fourth day after operation. Two and a half months after the operation there was but little tenderness left in the pelvic bones, the patient discarding her crutches and using a cane. Three weeks later the patient discarded her cane, and in nine and a half months the pelvic bones had entirely hardened and the pain had entirely disappeared.—*Memorabilien*, heft 7, Sept. 1893. W.

## ABSTRACTS.

### A CASE OF PUERPERAL ECLAMPSIA.

Dr. Ball reports (*N. Y. Med. Jour.*) a case of eclampsia at eight months and a half of pregnancy, and remarks upon the use of lithia water in the after treatment.

Mrs. M., a multipara, came into my hands during the latter part of April, 1890, for care during her approaching confinement, her regular physician being necessarily absent.

She was a large, fleshy woman, and inclined to take on adipose tissue rapidly. She had had some difficulty in her first confinement four years before, but since then had remained in good health. The case came into my hands at the beginning of the eighth month, the patient complaining of swelling of the feet and ankles and some headache.

I at once tested the urine and found it in about half the usual quantity, and albumin about a fifth per cent.

She was at once placed upon the usual prophylactic measures, with strict admonition concerning diet, consisting chiefly of milk. The urine was daily tested, and, in spite of keeping the system depleted by means of cream of tartar and petassii acetat, twenty grains every six hours, for its diuretic and cathartic action, also Epsom salts, the urine remained small in quantity with albumin increasing.

Seeing these symptoms continue, the question arose as to the advisability of inducing labor at once, as the child was known to be alive.

Finally, in accordance with the conservatism of most authorities of the day,

since no actual convulsion had occurred, although I anticipated an outbreak at any moment, I decided to await Nature's developments.

Just two weeks from the time I first saw the case, at eight months and a half, I was hurriedly summoned by the husband at 6 A. M., who stated that his "wife was dying."

I rushed into her room and found her in a severe convulsion. As I entered she exclaimed, "Oh, my head!" I at once injected hypodermically a quarter of a grain of morphine with one one-hundred-and-twentieth of a grain of atropine. No effect was produced except a transitory lessening of the convulsions, but they continued to come and go.

I at once summoned a brother medical officer in consultation, meanwhile attempting to control the spasms with chloroform. On his arrival we agreed that if venesection did not stop then, premature delivery would be necessary. An attempt to find the median basilic vein proved utterly futile, owing to the enormous quantity of fatty tissue lying over these veins. Seeing this, the spasms increasing in violence and frequency, a fatal result to both mother and child was feared. Chloral, twenty-five grains, and bromide of potassium, forty grains, were now given by enema. Venesection was abandoned and Barnes's rubber dilators, beginning with the medium size, were inserted into the os uteri successively and retained about ten minutes each. These



"dilators" were filled with cold water by means of an ordinary Davidson bulb syringe attached to their tubes.

In half an hour the dilatation was complete. The forceps was easily applied and a large female child was extracted. Of course, it had been destroyed by the violence of the convulsions. During this whole time the woman was wholly unconscious and remained so for thirty-six hours afterward.

Just here I may add, in speaking of venesection above, that when it was found impossible in the arm, recourse was had to four large wet cups directly over the kidneys. Ordinary glasses were used and about a pint of blood was extracted.

This undoubtedly lessened the frequency of the attacks for the time, during which time the dilatation was accomplished.

After emptying the uterus, contraction took place, so that very little blood was lost. Free action of skin was encouraged by the application of hot bottles, etc. Urine removed by catheter was small in quantity, very dark, and heavily laden with albumin—three quarters per cent.

No recurrence of the convulsions took place, though the patient remained drowsy and semi-conscious only for the next twenty-four hours. Copious antiseptic douches, very hot, were used daily thereafter for three weeks. Temperature did not exceed 100°. Diet was limited to hot milk with the free use of water. The urine was accurately tested daily as to quality and quantity. The albumin at delivery was a half per cent. with granular casts. The estimated urea in twenty-four hours for several days was only two hundred and fifty grains. As a result, uræmic symptoms continuing, the patient was put upon Buffalo lithia water *ad libitum*; no other water allowed. About three quarts were drunk daily at first. The urine increased in quantity by next day, color improved, quantity of urea increased to three hundred grains. Head symptoms improved. No medicine was given except to keep the bowels open. This lithia water was depended upon wholly in increasing quantities. At the end of six weeks the patient was in good condition and her urinary functions were almost normal. She then decided to go off for a visit to a neighboring public resort, in order to try the effect of a chaly-

beate water said to have proved excellent in kidney troubles.

One week's sojourn there produced such discomfort, constant headache, puffing around the ankles, and general malaise that she returned. Examination showed that the urine was only thirty-two ounces in twenty-four hours: albumin, one quarter per cent; some casts; urea, two hundred and sixty grains.

The patient was placed upon the former treatment, with immediate improvement in every way. The lithia water was gradually increased until urea showed five hundred grains in twenty-four hours, and seventy-five to eighty ounces of water passed daily.

The patient then rapidly convalesced and made a complete recovery.

The patient being of a heavy, plethoric type, I believe the chalybeate water was decidedly injurious.

The marked benefit as a result of the natural lithia water shows the power of this drug, in its natural state of solution, in dissolving the rapidly accumulating urea out of the minute uriniferous tubules, thus removing this vital poison, always so prominently existing in these cases.

No more trying conditions ever confront the attending physician than these cases of ante-partum, intra-partum, or post-partum eclampsia. In the first two conditions we have to deal with the problem of two lives. Given the conditions of a living child, at seven to eight months and a half, with the mother showing marked symptoms of impending eclampsia, shall we procrastinate, temporize by the various means usually adopted, till finally we are forced to act after the explosion has occurred, and probably extract a still-born foetus?

In the above-reported case might I not have saved one life by interfering sooner? This child was certainly viable soon after the case came into my hands.

The discussion of Dr. Green's interesting paper on Eclampsia, in the *American Journal of Obstetrics* for July, 1893, at the meeting of the American Gynecological Society, shows a marked difference of opinion among medical men as to our capability to prevent entirely the full development of puerperal eclampsia when we have had charge of the case early.

I certainly believe with those who realize our total inability to prevent this

climax, no matter how watchful we are in the early stages of many cases.

Of course, up to the seventh month the advisability of every conservative measure will hardly be questioned by any one.

I have seen nothing in the journals concerning the free and persistent use of

lithia water in the very earliest stages of these cases.

I believe, if this were more generally adopted, many of them would escape the further development of the insufficient renal function.

My only reason for presenting this case is to call attention to its beneficial effects.

### THE ETIOLOGY OF CANCER.

Professor Duplay and M. Cazin discuss in the *Semaine Médicale*, some of the more recent assertions made in various quarters on the etiology of cancer. In connection with the possibility of a more or less direct transmissibility of cancer from one member of a household to another, or among the inhabitants of a locality, the evidence is very meagre. Arnaudet asserted the frequency of cancer in the Canton of Coremeilles, where it exists in somewhat epidemic form and localized to certain districts. Arnaudet suggested that the disease was conveyed through drinking water, and especially cider made with contaminated water or by defective sanitation of dwellings. Professor Brono's subsequent investigations, however, failed to afford any corroboration. Fiessinger traced four cases of cancer in three houses to contamination, apparently with the dressings from a case of scirrhus of the breast. Guelliot and Fabre collected instances of "house-epidemics." In this connection Metchnikoff's hypothesis must be borne in mind that cancerous neoplasms might possibly belong to the group of miasmatic diseases capable of being propagated by spores formed outside the organism.

It has long been known that cancer is easily disseminated throughout the organism by cancerous particles detached from the primary growth and deposited in the various organs and tissues. Secondly, experiments on the human subject have shown that the inoculation of cancer to patients already suffering from the disease is not necessarily followed by positive results, though some have been observed.

Several investigators have recently claimed to have successfully inoculated human cancer to rats and mice, but a long series of prior attempts were apparently unsuccessful, and the more recent ones are open to doubt. In the inoculation

from one animal to another of the same species negative results were obtained by numerous investigators, but on the other hand a few positive ones have been arrived at, viz., by Goujon (epithelioma in guinea-pig), Kléncke (melanotic carcinoma in the horse), Wehr (carcinoma in the dog), Hanau (epithelioma in the rat), Eiselsberg (filio-sarcoma in rat), and Morau (epithelioma in mice). Hanau's well-known results are very striking.

Quite recently Morau has presented to the Academy of Sciences the following conclusions arrived at in his continued experiments.

1. White mouse epithelioma is inoculable from one animal to another of the same species.

2. Hereditary influences play a very important part in the development of these tumors.

3. Secondary growths are apt to form in various parts of the body, the development of these metastatic formations being favored by an injury to the tissues or organs.

4. Gestation produces the same effect as traumatism.

5. Certain toxins are produced in the substance of these tumors. They are absorbed into the system giving rise to general cachexia.

6. These tumors apparently lose their virulence by successive transmission through a series of animals of the same species.

7. So long as the skin is unbroken these tumors are apparently free from bacteria.

8. Picric acid seems to exert a favorable influence on these tumors by coagulating the protoplasm of the cells. For this purpose it must be brought directly into contact with the pathogenic cells (interstitial injections).—*Jour. Cuban and Genito Urin. Dis.*

## THE LIBRARY TABLE.

## BOOK REVIEWS.

*Text Book of Normal Histology*, including an account of the development of the tissues and of the organs, by George A. Piersol, M. D., with four hundred and nine illustrations, of which three hundred and fifty-eight are from original drawings by the author. Philadelphia. J. B. Lippincott Co., 1893. 429 pp.

It is not every day that the reviewer of science text books has the pleasure of commenting upon a work approaching so near perfection as that now under consideration. Dr. Piersol, for many years assistant to, and finally successor of the late Professor Richardson in the Histological Laboratory of the University of Pennsylvania, and afterward of our lamented Leidy as Professor of Anatomy, brings to his work a knowledge based upon long practical observation both here and in the best known laboratories of Europe. The portfolio of histologic photomicrographs issued by him several years ago, gave ample testimony to the delicacy of his technique, and the works of several local authors have long borne witness in their illustrations to the character of his work with the pencil and camera lucida; while those cognizant of the importance of neatness and method in the various steps of the preparation, staining and microtomy of tissues, could require no greater assurance as to the author's fitness for this work, than could have been had at almost any time during the past decade by a visit to his private work room.

The book on Normal Histology now before us, is but the natural and adequate fruition of a training and aptitude enjoyed by few. It is a pleasure to open a text book on a microscopic science which enters at once upon the subject proper without the traditional chapter on the structure and use of the microscope, an instrument now familiar in every household. A similar sense of relief is experienced in finding the details of staining, embedding, sectioning, etc., relegated to the back of the book, accompanied by a discriminating choice of methods and reagents.

The book is what it claims to be, a treatise on normal histology and the subject is handled with perspicuity, combined with an up to date thoroughness which leaves little to be desired. We find nerve histology, for example, illustrated with new and fresh drawings, showing the results of the latest discoveries based upon the Golgi gold and silver method, from the author's own pencil or that of Ciaccio, Lenhossek and other modern investigators, rather than by the time honored cuts of Stricker, Henle, Krause, Kuhne, etc. We are pleased to note the inclusion of discoveries by local investigators, as for example the intra-fibrillar capillaries of the heart muscle described by Meigs. The text is enlivened by the use of heavy faced type for the more important names and phrases, and throughout compares favorably with the beautiful press work of the books by Lang, Korschelt, Hertwig, and others, issued within the last year

or two by Macmillans. There are a number of minor points open to criticism, chief among which is the entire absence of bibliographic references, so useful to all who wish for something more than dogmatic statement and who desire to refer to original sources, especially in matters of dispute.

We cannot avoid feeling that the value of the book would have been greatly increased, had the author made his treatment more comparative and brought to bear the many apt illustrations to be drawn from recent investigations in the histology of the invertebrates and lower animals. The reader is given no inkling of the diversity of opinion regarding the phagocytes of Metschnikoff, or the origin and nature of the mesoderm, nor is any suspicion aroused of the fight that is being waged about the nucleus by students of the cell, from the standpoint of physiology and heredity. That most important and wonderful of all cells, the ovum, is passed over without a suggestion that the animal ovicell varies greatly in its internal arrangement and external environment in the different animal types; while the normal histology of the imperfect organs of embryonal life is touched upon in a manner which scarcely realizes the hopes held out by the subtitle of the book.

To be sure the work is intended primarily as a text book for medical students, but even they would not be harmed by being impressed with the value of comparison in connection with observation and the suggestion now and then that all normal histology is not human or mammalian histology nor the histology of adult structures.

*Manual of Bacteriology*, for Practitioners and Students with especial reference to practical Methods, by Dr. S. L. Schenk. Translated from the German by W. R. Dawson, M. D. with 100 illustration partly colored. London, and New York; Longman's, Green, and Co., 1893.

The rather harsh criticisms of the original editor of Dr. Schenk's book in the *Vienna Medical Journal*, and the more recent review in the *Dublin Medical Journal*, smack strongly of personal feeling, directed on the one hand at the author, Professor extraordinary in the University of Vienna, and on the other, at Dr. Dawson, Travelling Prizeman of the University of Dublin. Viewed from the standpoint of the ideal, the book undoubtedly has its faults; few treatises above criticism are to be found, especially among text books; but compared with existing books on bacteriology, Dr. Schenk's is a valuable contribution, and the peer of almost any in the long list of publications on the subject.

For the busy practitioner and student it strongly commends itself, inasmuch as the pages are not loaded down with historic or polemic detail, but the bacteriological analyses of air, water, earth, articles of diet, pus, organs and cavities of the body, feces and urine, nasal and other secretions, and the



blood are treated of systematically and in a way that presents the results and methods of investigation in the respective fields without waste of space or the reader's patience. That the translator has not altogether escaped the obscurity, inherent in the language of the original, is evident now and then, but in no wise affects the intrinsic value of the book.

The fact that the publishers have left nothing undone to make this a beautiful example of modern book-making is evident in the large clear type, wide margins, fine paper, and excellent illustration and adds largely to the value of the book. To those who have no inclination for the exhaustive presentation of the subject given by Sternberg in his recent, voluminous treatise, but who wish to have it placed before them, as from an intelligent and experienced teacher to his pupils, we would commend this work.

*Les Troubles du Language Chez Les Alienes.* Par J. Seglas, Medecin Suppleant de la Salpêtrière, etc., etc., with 17 figs. in the text. 299 pp. Paris. J. Rueff et Cie., publishers, 1892.

This elegant little work, which forms a number of the Charcot-Debove library, considers the subject of the written and spoken disturbances of speech of the insane, and is the first complete contribution to the study of this subject. In the year 1891, the writer

gave a number of lectures on this subject at the Salpêtrière and these form the skeleton of this work. It is a welcome addition to our knowledge of this subject, for without understanding the various disturbances of speech in the insane, many of the symptoms will pass unperceived, or be misinterpreted, and hence many precious indications for diagnosis, prognosis and treatment may be neglected. Again, if one but remember that all insane persons, excepting slight variations from social medium, education, etc., of all times and countries express themselves in the same manner in their delirium, one will see the importance of familiarizing oneself with their language. After a few preliminary chapters, on the division and general plan of the subject, the development of language in idiots and imbeciles, he enters into the consideration of the disturbances of spoken language, with its various abnormal modifications and illustrates it with examples and cuts. The second portion treats of the disturbances of written language, which is carefully and comprehensively traced and studied in its many details with admirable industry and breadth of experience. The third and final section is consecrated to the abnormalities of gestural language, mimic language, and its relation to intellectual disturbances. The book is one which fills a gap in our knowledge of this subject, and which will be the source of much instruction to those working in this department.

## CURRENT LITERATURE REVIEWED.

IN CHARGE OF ELLISTON J. MORRIS, M. D.

### THE KANSAS CITY MEDICAL INDEX

for December. Dr. C. F. Wainwright contributes a paper on the

#### Early Diagnosis of Carcinoma of the Stomach.

The author believes that in the near future, by the help of modern means of diagnosis of diseases of this organ, and assistance of able surgeons, the profession may look forward with some degree of hope to rescuing a fair percentage of such cases as may be made the subject of early study and treatment. The author advises the chemical examination of the contents of the stomach as confirmatory evidence of the disease. The emptying of the stomach should take place after the administration of a test meal, the time depending entirely on the nature of the meal. The author prefers the test meal of Ewald as the simplest and best. This consists of one water roll, weight 35gr. and a cup of tea or water; this meal can be taken from the stomach one hour afterwards in a fluid form, while the trial meal of Riegel and others, consisting of beef-broth and bread, is much more complex and cannot be removed in fluid form for several hours.

Dr. Lewis Schooler discusses

#### Appendicitis in its Relationship to Life Insurance.

The author believes that if the present accepted views are correct in regard to one attack of appendicitis predisposing to another and finally to a state of chronic inflammation of the organ, then all persons who have been the subjects of this disease and have not undergone an operation for its relief should be rejected by the examiner to whom the history is given. The time which must elapse after an attack before the risk may be considered a safe one can only be determined by the observation of a large number of cases treated by the expectant method without surgical interference. Much information would be gained if cases treated by the expectant method were promptly reported. The author states that no case with suspicion of chronic appendicitis should be accepted. But where there is a history of a single attack without recurrence within a space of twelve months he would be inclined to class the applicant among the desirable risks. Where there have been two or more attacks within one year the risk should not be accepted until at least two years have elapsed without a recurrence. Where there have been repeated attacks covering two or more years the risk should be rejected.

#### Some Points in Regard to Colotomy

is the title of a paper by Dr. Emory Lanphear. The author states that, under modern

antiseptic methods, inguinal colotomy is always to be preferred to the lumbar variety. The classical method of performing the operation by bringing up the bowel, stitching it into the wound and opening the side of the gut he does not consider a good method of procedure and would adopt it only when certain that a restoration of the natural channel at some future time might be impossible. The operation he prefers is complete division of the gut, inversion and dropping of the lower end and suture of the upper to the margins of the wound. The objection to colotomy that the subsequent life of the patient is a miserable one is not sustained by his experience; he has found that the general condition improves greatly and even if the malignant disease cannot be removed the life of the subject is prolonged for a year or more, the cancer developing much more slowly than before colotomy; and the patient is free from the pain and irritation consequent to the passage of feces over the diseased area.

Dr. T. N. Taylor discusses

**The Modern or Mechanical Treatment of Trachoma.**

After reviewing the various methods of treatment, the author comes to the conclusion that the treatment by systematic expression gives the best results. He has found the Knapp roller forceps very satisfactory for the central portion of the lids, but at the angles the Prince instrument is more manageable. However, the mechanical device is by no means so important as a determination on the part of the operator to bring away as completely as may be the whole contents of the follicles. All is complete after the surfaces are wiped and the bleeding, which is rather favorable than otherwise, has ceased. The lids at once swell to several times their natural thickness and on the following day may show a general ecchymosis. No treatment beyond careful cleansing is necessary in the majority of instances, but at times the reaction may require the application of iced cloths for twelve to thirty-six hours, and their use is always grateful to the patient. After a few days the application of weak solutions of silver, glycerate of tannin or even sulphate of copper crystals may be resumed with benefit in some cases. A variable time is required before the roughened membrane becomes smooth, but a reappearance of granulations is extremely rare. From two to six weeks suffices for the cure of ordinary uncomplicated cases where as formerly six to eighteen months was the average expectancy.

Dr. L. Reynolds reports

**A Case of Ruptured Uterus.**

The author was called in consultation after the accident happened and is therefore unable to say whether the case was one of spontaneous occurrence, or was assisted artificially. Some of the conditions present were favorable for its production without artificial aid, such as a small pelvis and an unusually large child, together with the age of the patient (26 years). No ergot had been given. There was also present a possible artificial cause such as the repeated applica-

tion and slipping of Naegeli's forceps, previous to the author's arrival. On the author's arrival the head of the child was found presenting but not engaged. On re-examination by the attending physician the head was found to have receded. The patient was anesthetized and the child extracted with forceps. The placenta not being expelled, the author introduced his hand within the uterus to extract it and discovered a complete longitudinal rent extending from the cervix upwards beyond the center of the uterus. A proposition to perform an immediate laparotomy was opposed by the attendant on account of the necessary intervention of a priest whom it required a day or two to get. "By the time the priest arrived septic symptoms had set in and the patient was left to the inevitable. Death occurred on the third day." Until the removal of the placenta, rupture had not been suspected, and except for the reporter's careful examination at the third stage of labor its occurrence might have been entirely overlooked and the result attributed to some post puerperal change. From his observation in this case the reporter believes that a large percentage of the cases of rupture of the uterus are never recognized.

[This case forcibly emphasizes the dangers of delay, which in this case one is inclined to call criminal.—ED.]

The remaining papers in this issue are: the "Report of an Operation for Glioma" by Dr. G. R. Rucker; "Legal Injustice to the Insane" by Dr. B. D. Eastman, and "The Treatment of Appendicitis" by Dr. John B. Deaver in which the author reiterates the opinions expressed in a former paper, a review of which was published in THE MEDICAL AND SURGICAL REPORTER for October 7, 1893, page 579.

**THE UNIVERSITY MEDICAL MAGAZINE**

for December. Dr. Harrison Allen discusses  
**The Etiology of Fracture of the Lower End of the Radius.**

The author concludes that the generally accepted proposition that the accident is the result of a fall upon the palm or ball of the thumb is not satisfactory and is in part erroneous. He believes that when the arm is thrown in front of the body, as in the act of falling, the impress is received upon the part of the palm answering to the little finger, and not upon the palm as whole, or upon the ball of the thumb. What takes place can be formulated thus: As a result of violent contact of the hypothenar portion of the palm against the ground, the hand is first pressed upward (not backward)—that is to say, in a direction as though the forces were exerted on the hypothenar side of the palm and were to traverse the palm to the thenar side and the direction is upward since the hand is midway between pronation and supination. Secondly, the force of the impact is measurably transferred to the center of the palm obliquely inward and backward. The act of a violent and unexpected fall throws the entire weight of the body upon the unrelieved hand, with the result of wrenching the hand inward and upward from the

hypothénar side and impacting the radius against the carpus. In this fashion are created all the several lines of the lesion.

**The Operative Treatment of Knee-Joint Disease**

is the title of a paper contributed by Dr. De Forest Willard. After duly considering the various operative measures, the author comes to the following conclusions:

1. Mechanical treatment by rest, fixation and the use of crutches, either axillary, perineal, or ischiatic, is absolutely essential both before and after operation.
2. In children under 12 years of age conservative measures should be carried to the extreme, and all operative procedures should tend to non-interference of the epiphyseal line for as long a period as possible, in order to assist growth of the limb. In these young cases, therefore, tenotomy with subsequent fixation should be the primary procedure, to be followed by erasion when necessary, and by excision only when life is absolutely threatened.
3. From 12 to 15 years of age conservatism should still be the rule, although the dangers from a shortened limb subsequent to operation are not so serious after growth has been completed. In adults operative treatment should be early and more radical in character, erasion still being preferable to excision, except in very degenerated cases.
4. Amputation should be employed in children only as a "dernier resort;" in adults with extensive disease it is often a wise procedure.
5. The introduction of the anti-bacillary substances, both extra- and intra-articular, offers hope of retardation in the growth of bacilli, but as yet the procedure is in the experimental stage.
6. After the subsidence of all inflammatory symptoms the late deformity should be overcome:

- a. By tenotomy, with forcible replacement.
- b. By excision; rarely by osteotomy.

Dr. William S. Carter contributes a paper

**The Globulicidal Action of Blood-Serum.**

detailing a number of experiments, as the result of which he comes to the following conclusions: Of the different blood serums used in these experiments, the most toxic and the most actively globulicidal is human serum injected into rabbits. When injected rapidly into the veins it causes death in a very few minutes, the corpuscles being diminished to one-half or one-third their normal quantity; when injected slowly, death comes on much later, the corpuscles being reduced to one-fifth their normal. Upon dogs human serum has neither a toxic nor globulicidal action. With frogs there is a decided globulicidal and toxic effect.

Dogs' serum is toxic when injected rapidly into the veins of rabbits; when injected slowly, in some cases death comes on with slight diminution of red blood-corpuscles, while, in others recovery occurs even after the use of 30 cc., and there is but slight alteration in the number of corpuscles.

The serum of the horse is neither toxic nor distinctly globulicidal, when injected into rabbits.

The serum of the cat does not appear to be toxic nor globulicidal when injected into the rabbit.

Serum of the sheep is neither toxic nor globulicidal for cats.

Heat destroys both the toxic and globulicidal action, but these properties are not lost by standing in a cool place for one week.

There is no great alteration in the number of leucocytes, except that they seem to be reduced in number when the red blood-corpuscles are destroyed.

When human or canine serum is injected into rabbit the proportion of lymphocytes seems to be increased, while the multinuclear, or oldest of the leucocytes, are correspondingly diminished.

When the serum of the horse was injected into the rabbit there was a slight diminution of lymphocytes, while the multinuclear form was more abundant.

From the fact that the serum of the dog is toxic for rabbits, without having any decided globulicidal effect, and also that human serum injected rapidly into rabbits causes death in a few minutes, before the corpuscles are reduced below one-third their normal, while the slow injection causes a reduction to one-fifth of the normal number before death, it seems probable that the toxicity is not dependent upon the globulicidal action, and indicates a multiplicity of poisonous substances in the serum. The fact that heating destroys these actions indicates their albuminous nature.

The experiments made by the author show that the corpuscles of an animal are not destroyed by *any* foreign serum. The only serums exerting a toxic or globulicidal action were those of flesh-eating animals—man and dog—while serum from man had no effect on the dog. But serum of the cat had no effect upon the rabbit.

In those cases in which death occurred from the injection of human or canine serum, a cardiac thrombus was never found, but the ventricles were distended with fluid blood, often containing dark, non-adherent and very soft clots—such as form at the agonic period of death.

Dr. James Hendrie Lloyd contributes a paper on "Pachymeningitis and Myelitis from Pott's Disease, and Septic Neuritis of the Cauda Equina from a Bed-sore over the Sacrum." The author believes that the essential disease-process that involves the cord and its membranes in caries of the spine is an actively infectious one, causing first pachymeningitis, and later a meningo-myelitis, and that bone pressure as an active cause in the impairment and destruction of the cord, is of strictly secondary importance, and in the majority of cases of no importance whatever.

Dr. Charles A. Oliver reports "The Clinical History of a Case of Spindle-celled Sarcoma of the Choroid, with a Study of the Microscopic Condition of the Growth."

The remaining papers in this issue are: the report of a case of "Congenital Absence of the Vaginal Cervix" by Dr. C. B. Penrose; and the report of a case of "Symmetrical Hemorrhagic Infarct of Both Lungs" by Dr. Frank Massey.



## PERISCOPE.

IN CHARGE OF WILLIAM H. BRICKER, M. D., B. SC.

## MEDICINE.

**The Clinical Course, Diagnosis and Structure of Duct Cancers or Villous Carcinomas of the Breast.**

Anthony Bowlby has contributed a valuable paper upon this subject, and his conclusions are as follows:

"1. In a considerable proportion of the cases there is at some time a discharge of fluid from the nipple, and this discharge may precede the development of any tumor perceptible to the patient for a period of even several years. The growths are, however, not associated with so-called eczema of the nipple, or Paget's disease.

"2. The patients are mostly over middle age.

"3. The axillary glands are not usually affected.

"4. The tumors are not of very rapid growth.

"5. Neither the nipple nor the skin is usually retracted, but the growths are commonly situated near the nipple.

"6. The tumors are occasionally multiple in the same breast, and are firm and elastic, or else shotty and knotted to the touch rather than hard and nodular like a scirrhus carcinoma.

"7. On section, the growths are seen to be encysted, and are generally darkly blood-stained, soft and friable. Sometimes they are of a lighter color, and grayish and granular on the surface. Some of the cysts are almost filled with solid growths, others contain little but blood-clot and serum. It can often be plainly seen with the naked eye that some of the cysts are formed by dilated ducts, and the solid growth can often be seen springing from the lining membrane of the latter. The cysts and the growth may be situated either in the gland or in the surrounding fat. Occasionally, the tumor may protrude through one of the dilated ducts on the summit of the nipple.

"8. The tumors are liable to recur locally, but are not nearly so prone to affect the lymphatic glands or to disseminate as are the spheroidal-celled scirrhus carcinomas. If attention be paid to these points, I think no difficulty will be found in diagnosing these tumors from scirrhus carcinomas. Sometimes there is difficulty in separating them clinically from the cystic sarcomas.

"With regard to this the following points are worthy of attention: Duct cancers occur frequently in old women, in whom the growth of cystic sarcoma is relatively uncommon; they do not attain so large a size, nor do they grow so rapidly as do the cystic sarcomas; the cysts they form are usually much smaller than are the cysts in the latter class of growth; the discharge from the nipple is usually much more blood-stained."—*London Lancet*.

## Inoculation of Measles.

Dr. Hugh Thompson, of Glasgow, describes nine cases in which he had inoculated children with fresh serum taken from blisters on patients suffering from measles. He believes that four were rendered immune, and that in two the experiment failed. At the point of insertion of the serum slight measly looking patches appeared in from one to two days, and lasted for two or three days; accompanied with slight catarrhal symptoms. The serum is taken from small blisters no larger than a measly patch, and used immediately, and inserted by superficial scarifications.—*Pract. and News*.

**The Human Nasal Canals as related to Climate and Pulmonary Disease.**

Dr. William C. Braislin shows that in negroes the nasal canals are wider, shorter, and less deep than in other races, and thereby less protection is afforded the lungs. The author believes that the African nose, being adapted to a tropical climate, is not suited for the colder climates, and that in this lies the greater susceptibility of the negro to consumption and other diseases depending upon irritating qualities in the atmosphere.—*Science*.

**Importance Attached to the Conditions of the Tonsil.**

Dr. John W. Farlow calls attention to the prominence given the tonsils by the act of gagging, which forces them forward and toward the median line, cutting off the view of all that lies beyond. Moreover, the difficulty of posterior rhinoscopy and the mystery surrounding the function of the tonsil all unite to direct the physician's attention to these little bodies. The examination of the tonsils should be conducted while they are in repose, so that any changes in the adjoining tissues may be recognized and properly treated. The author shows that the symptoms usually ascribed to large tonsils may likewise be due to other causes (adenoid disease, etc.), and he would have these eliminated before resorting to tonsillotomy.

In conclusion, he presents the following summary:

1. Because the tonsils are easier to see than the nose and post-nasal space, is no sign that they are more important than the latter.
2. Form no estimate of the size of the tonsils unless you see them in repose.
3. Always examine the back teeth and the base of the tongue.
4. In acute follicular disease of the tonsils, look for and treat disease of the other follicular tissue in the throat.
5. Nasal obstruction, cough, and impaired voice are much more likely to be due to nasal

or post-nasal hypertrophy than to tonsillar.

6. The fact that the tonsils are enlarged or diseased should lead us to look for a possible explanation in the parts higher up.

7. Free the nose and post-nasal space in addition to, or instead of, tonsillotomy, if you wish to improve the voice and respiration.—*Boston Medical and Surg. Jour.*

#### Vaseline in Certain Affection of the Middle Ear.

Dr. Delstonche (*Le Bulletin Medical*, 1898) speaks highly of injections of liquid vaseline in adhesive affections of the ear. He injects it through the Eustachian tube into the tympanic cavity. It is perfectly innocuous, and from an experience extending over several years he finds it of value.

1. To rupture extensive adhesions of the tympanic membrane with the wall of the labyrinth where insufflation of air, etc., are found insufficient. He has had several cases of partial success with forced injections of the liquid vaseline.

2. To clear out mucous accumulations from the tympanum during the course of certain chronic catarrhs. It forces the mucous into the mastoid cells, where it no longer interferes with hearing, or into the pharynx.

3. To diminish the chances of inflammatory reaction after paracentesis of the tympanum, where the matter filling the tympanum is dense or viscid, and will not evacuate itself spontaneously in a satisfactory manner. Here, from its innocuity, it is to be preferred to any other liquid.

4. To open an obstructed Eustachian tube when mucus blocks it and prevents insufflation of air, a few drops of vaseline blown through the catheter will clear it at once. Hence this simple means is always to be tried before dilatation with sounds is attempted.

5. Finally, in acute inflammation of the middle ear, either with or without perforation, especially in purulent otitis complicating influenza, massive injections of liquid vaseline saturated with iodoform render signal service, from their sedative action upon the atrocious pains which often accompany this affection. They also appear to hasten and aid to a favorable termination.

#### The Administration of Milk by Accurate Dosage.

Patients frequently declare that they cannot take milk. The difficulty, however, is not with the milk, if due care is exercised to obtain a pure article, but is due to the uncertain method of its administration. Very few patients can commence abruptly and take two or more quarts per day, as such quantities are likely to upset the stomach.

The writer has had prepared a graduated glass for the administration of milk, indicating the number of tablespoonfuls from one to twenty, as well as the hours for taking the milk in the morning, afternoon, and evening, which he calls a "milk-tumbler." Such a tumbler is a great convenience for use in

private as well as in attendance on "rest-cure" cases.

The writer has seen very good results follow the proper administration of milk in cases of great irritability of the stomach, chronic dyspeptics, and the like. By commencing at seven o'clock in the morning and stopping at ten o'clock at night we have eleven times for giving the milk, so that the quantity of milk daily taken can easily be reckoned.

Sometimes it is well, in commencing the milk course, to allow the patient three simple, easily-digested meals of selected articles a day, in conjunction with small but gradually increasing doses of milk. As the quantity taken reaches two or more quarts daily it is well to omit one or more of the meals, until the absolute milk diet is finally obtained.

When milk is given with a view to affording the digestive organs absolute rest, then milk only should be permitted for at least five weeks, or longer, according to the case and the character of the symptoms. Even after recovery it is always well to recommend the patient to take at least a quart of milk daily for an indefinite time. In the great majority of cases the milk will prove very grateful to the patient subsequent to undergoing this treatment.—Thomas G. Morton, M. D. in *Food*.

#### Complications of Vaccination.

Epstein reports two cases of purpura and fourteen of erythema developed in the course of four hundred and thirty vaccinations. The cases of purpura occurred in children 12 and 4 months old, respectively, the hemorrhage spots being of varying size, appearing four days after vaccination, gradually disappearing in the course of a week, and preceded by agitation, insomnia, and fever. In the first child, which was rachitic, the spots occupied exclusively the left superior extremity, especially its extensor surface; in the second case they were distributed upon the extremities and the trunk. In both the vaccination proved successful, the vesicles at no time, however, being hemorrhagic. Five days after the attack of purpura measles developed in the first child, the eruption being quite distinct from the petechiae. Of the fourteen cases of erythema, the eruption appeared in one on the fourth day, in one on fifth day, in one on the sixth day, in five on the seventh day, in two on the eighth day, in three on the ninth day, in one on the tenth day, and in one on the eleventh day after vaccination. The distribution of the eruption followed no particular course. Most often it appeared about the inflammatory areola of the vesicle and, at the same time, upon the extensor surfaces of the arm and forearm; often it appeared on the postero-external aspect of the thighs, upon the thorax, and upon the sacrum. The erythema resembled the exanthema of measles. It developed in the course of from twenty-four to seventy-two hours, and persisted, ordinarily, for from six to eight days.—*Jahrbuch für Kinderheilkunde*, B. xxxv, p. 442, 1893. —*Universal Med. Jour.*

### The Effect on Sucklings of Purgatives Administered to the Mother.

Observations were made on forty-two cases, and the only conclusions that could be drawn were:

(1) Sulphate of magnesia administered to the mother frequently causes looseness in the sucking child; and

(2) Senna, cascara sagrada, and aloes rarely affect the child's bowels when administered to the mother.—*Ex.*

### Prize of the American Neurological Association.

The American Neurological Association offers a prize of \$200 for the best essay on any subject connected with Neurological Science.

This competition is open to physicians who are legal residents of states in North and South America.

Essays must be sent to the Secretary of the Association on or before the first day of May 1894.

Each essay shall be accompanied by a sealed envelope containing the name and addresses of the author, and bearing on the outside a motto, which shall also be inscribed upon the essay.

Essays shall be type-written, in either the English or French Languages, and with the pages securely fastened.

The Council of the Association reserves the right to reject any or all essays judged unworthy of the award.

Each essay must exhibit original research, and none will be accepted that has previously been published.

GRACE M. HAMMOND M.D., *Secretary.*

58 West 45th Street, New York City.

### What Benefit can Ear Patients Derive from Nasal Treatment?

H. Gradle (*Jour. of Amer. Med. Assoc.*) arrives at the following conclusions:

1. Acute suppurative inflammation of the middle ear, if not treated, has a tendency to become chronic, the tendency increasing with the age of the patient.

2. Chronic suppuration of the middle ear rarely heals without ear treatment. Neither acute nor chronic purulent otitis are influenced by nasal treatment, but the liability to relapse after their cure is decidedly lessened by the removal of naso-pharyngeal anomalies.

3. Acute catarrh of the middle ear will generally terminate in complete recovery under aural treatment and sometimes even without it, provided there are no persistent nasal or pharyngeal lesions. But when these are present the disease is more likely to become chronic in spite of aural treatment, and in many instances can either not be cured, or, if improved, will speedily relapse unless the normal state of the nose and throat is restored.

4. Proliferating or adhesive disease of the middle ear is the consequence of retro-nasal

catarrh, and its course is determined by the course of the disorder causing it. Aural treatment alone is practically useless in this form of trouble, while nasal treatment, if successful so far as the catarrh is concerned, will also arrest the ear-disease. The restitution of hearing, however, depends on the length of time the disease has lasted, and is often aided by ear treatment after the cure of the retro-nasal catarrh.

### Engelman (R.) on a Contribution to the Study of the Accidents of Vaccination.

#### Conclusions:

1. Variola is communicable as an air-borne and air-exit contagium.

2. Its specific virus has not been isolated.

3. Its identity with vaccinia is undetermined.

4. The failure and non-protective character of vaccination is due to vitiation of the vaccine supply.

5. This vitiation is (1) saprophytic, annulling the specific quality of the virus, or (2) pathogenic, inflicting injury upon the individual.

6. Consequently such change in the lymph supply is demanded as to exclude a mixed infection.

7. Vaccination confers immunity from smallpox, but not from other (1) synchronous or mixed, or from (2) secondary infections.

8. These secondary contact infections are avoidable.

9. Hence antiseptic methods applied (1) to the present vaccine supply, and (2) to vaccination, will make accidents of vaccination a thing of the past.

10. To procure which end it is desirable, if not necessary, to establish government vaccine stations.—*No. Amer. Pract.*

### SURGERY.

#### Ravogli (A.) on Syphilitic Plaques.

During the last six years Dr. Ravogli has treated 216 cases of syphilis. Of these 116 were early syphilis (secondary stage); 94 late syphilis (tertiary stage); and 6 congenital.

Of the 116 cases of early syphilis mucous plaques were found in 103 cases. Of the late cases (94) mucous plaques were found in 24 cases.

Sex seems to have no influence, although many authors claim that they more frequently affect women.

The frequency with which the different anatomical regions are affected is shown in the following table:

#### In the secondary period—

Lips .....	38
Anus .....	11
Tongue .....	11
Vulva labia, majora and minora .....	12
Mouth .....	6
Tonsils and palate .....	5
Scrotum .....	5
Thighs, int. fold. ....	4



Præputium and glands.....	3
Larynx (vocal cords).....	2
Pharynx.....	1
Hand (interdigital).....	1
Foot, between the toes.....	2
Under the breast.....	1
Axilla.....	1
Face.....	1

In the tertiary period, plaques appeared on the—

Palate.....	6
Tongue.....	6
Nostrils.....	5
Conca auricular.....	2
Lips.....	2
Scrotum.....	2
Anus.....	2

### The Treatment of Vulvar Vegetations by Pure Carbolic Acid.

Derville, of Lille (*Jour. de Med. et de Chir. Pratiques*), treated a case of vulvar vegetations covering both the anus and the vulva, and reaching the size of a man's fist. He cured this enormous growth by local washing with pure carbolic acid. The whole surface of the vegetations was painted with the pure acid; this application was repeated about every fourth or eighth day. The treatment occasioned no pain, but frequently caused erythema, vesiculation, and excoriation of the surrounding parts. This is prevented by the application of vaseline to the healthy skin.—*Therap. Gaz.*

## GYNECOLOGY.

### Premature Sexual Development in Relation Specially to Ovarian Tumors, with an Illustrative Case of Ovarian Sarcoma in a Child of Seven; Laparotomy; Recovery.

The patient, a girl of seven years, was suffering from a large abdominal tumor. Previous to March she presented no abnormal symptoms, when she was raped by a boy on several occasions. Immediately there was a profuse hemorrhagic discharge from the vagina, which continued almost uninterruptedly until she was admitted to the hospital seven months later. Shortly after the rape the abdomen began to swell, until on her admission she had a tumor about the size of a seven months' pregnancy.

However, this tumor proved to be an ovarian sarcoma, weighing over six pounds. Laparotomy was done, the tumor removed and the child made an uninterrupted recovery.—*Ex.*

## ARMY AND NAVY.

U. S. ARMY, FROM DECEMBER 3, 1893, TO DECEMBER 9, 1893.

1st Lieutenant Allen M. Smith, Assistant Surgeon, granted leave of absence for four months, to take effect on or about January 4, 1894.

The leave of absence granted Major Peter J. A. Cleary, Surgeon, on Surgeon's Certificate of disability, is extended four months on Surgeon's certificate of disability, on condition that he report in person to the commanding officer, Army and Navy General Hospital, Hot Springs Ark, on or before December 11, 1893, for treatment therein.

Leave of absence until February 22, 1894, is granted Major John Brooke, Surgeon U. S. Army.

1st Lieut. Benjamin L. Ten Eyck, Assistant Surgeon, is assigned to station at Fort McIntosh, Texas, for field duty in the Department of Texas.

By direction of the President, the retirement from active service, this date, December 4, 1893, by operation of law of Colonel Charles Page, Assistant Surgeon General, under the provisions of the act of Congress, approved June 30, 1882, is announced.

1st Lieut. Charles Wilcox, Assistant Surgeon, will be relieved from temporary duty, at Angel Island, California, on the arrival there of Major Benjamin F. Pope, Surgeon, and will report in person to the commanding officer, Boise Barracks, Idaho.

1st Lieut. Francis A. Winter, Assistant Surgeon U. S. Army, is relieved from further duty at Fort Wingate, New Mexico, and from temporary duty at Fort Bayard, New Mexico, and will proceed to New Fort Bliss, Texas, and report in person to the commanding officer for duty at that station.

## NEWS AND MISCELLANY.

### Reduced Rates for the Holidays.

In pursuance of its liberal policy, the Baltimore and Ohio Railroad Company announces that excursion tickets will be sold between all stations on its lines east of the Ohio River during the Christmas and New Year holidays at reduced rates. The tickets will be sold for all trains December 23, 24, 25, 30, 31 and January 1, and will be valid for the return journey on all trains until January 3 inclusive.

### Through Cars to New Orleans.

Among the many important improvements in the Baltimore and Ohio Railroad train service is the addition of through Pullman Sleeping Cars from New York to New Orleans, via Philadelphia, Baltimore, Washington, and the famous Shenandoah Valley route, passing through Roanoke, Knoxville, Chattanooga and Birmingham. The train leaves New York daily at 5.00 P. M.; Philadelphia, 12th and Market Sts., 7.22 P. M. and 24th and Chestnut Sts. 7.38 P. M., reaching Roanoke at 7.50 A. M.; Knoxville, 3.52 P. M., and New Orleans, 12.45 P. M.

This train is very handsomely appointed, being vested throughout, and has Dining Car service New York to Chattanooga. At Washington a Pullman Sleeping Car, which runs through to Memphis, is added to the train.